



***California Department of Forestry & Fire
Protection
Tehama-Glenn Unit***



Fire Management Plan 2004



***“Your Land.....
Your Community.....
Your Decision.....”***

Education
Engineering
Enforcement
Prefire Planning
Fire Safe Council
Vegetation Management

Tehama-Glenn Unit
Fire Management Plan
2004

The Tehama Glenn Unit Fire Management Plan is compiled with the assistance and information from the following stakeholders.

Tehama Fire Council
Thomas McCubbins

Battle Creek Watershed Conservancy
Sharon Paquin-Gilmore

Cottonwood Creek Watershed Group
Vieva Swearingen

Mill Creek Conservancy
Mike Mitzel

Reeds – Red Bank Landowners Group
Tehama County Resource Conservation District
Vicky Dawley

Sunflower Coordinated Resource Management Plan (CRMP)
Bill Burrows

The Nature Conservancy
Peter Hujik

Cottonwood Creek Watershed Fire Safe Council
Vieva Swearingen

Sierra Pacific Industries (SPI)
Mike Mitzel

Department of Interior – Bureau of Land Management
Andrea L. Carter Fuels Management Specialist

Tehama-Glenn Unit
Fire Management Plan
2003

Contents

I. Executive Summary

- A. *Goals and Objectives*
- B. *Fire Plan Framework*

II. Stakeholders

- A. Who are they?
- B. Stakeholders
 - Watershed and Conservancy Groups*
 - Fire Safe Councils*
 - Industrial Groups*
 - Governmental Agencies*
- C. Fire Safe Planning and Hazardous Fuels Reduction at a Glance
 - The Problem*
- D. Assets at Risk
 - Fire Threatened Communities in Tehama-Glenn Unit*
 - Total Assets at Risk Fire Council to re-rank parameters*
 - Wildland Urban Interface Population Areas*

III. General Description of the Current Fire Situation

- A. Ignition Workload Assessment and Fire History
 - Total Fire Workload*
 - Fire Causes*
 - Fire History*
 - Ten-Year Fire History*
- B. Fuels
 - Hazardous Fuels Assessment*
 - Fuel Model Description for Tehama-Glenn Unit*
 - Tehama-Glenn Fuel Hazard Ranking*
 - Fuel Models*
 - Vegetation Communities (Planning Belts)*
- C. Frequency of Severe Fire Weather
 - Severe Fire Weather*

IV. Priority Areas

Tehama-Glenn Unit
Fire Management Plan
2004

Zone Boundaries

Zone Descriptions

A. General Description of Zones with Action Plans and Potential Prescriptions

Zone 1 – Paskenta, Red Bank, R-Ranch

Zone 2 – Bowman, Dibble Creek, Lake California, Wilcox

Zone 3 – Bend, Dales, Hog Lake

Zone 4 – Manton, Sky Ranch

Zone 5 – Mill Creek, Mineral

Zone 6 – Live Oak, West Red Bluff

Zone 7 – Vina Plains

Zone 8 – Ishi, Paynes Creek

Zone 9 – Flourney, Rancho Tehama

Zone 10 – Glenn County SRA

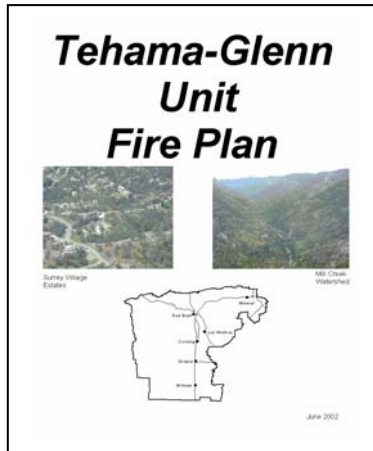
B. Action Plan

Projects

Project Locations

C. Cultural Issues

I. EXECUTIVE SUMMARY



Executive Summary

The Tehama- Glenn Unit Fire Management Plan documents the assessment of the fire situation within the unit's area of responsibility. The plan includes stakeholder contributions and priorities. The document also identifies strategic areas for pre-fire planning and fuels treatment as defined by the people who live and work with the local fire problem. This plan has been adapted from the original Tehama-Glenn Unit Fire Management Plan 2000 and subsequent versions.

The goal of this plan is to reduce the destruction and associated costs from wildfire by protecting assets at risk through focused pre fire management prescriptions, and improved initial attack success. This plan utilizes five strategic objectives to construct the Fire Plan Framework as identified in the California Fire Plan, and incorporates them into the planning and implementation process. The five objectives and framework components of the Tehama Glenn Fire Management Plan are as follows:

- Wildfire Protection Zones – To create wildfire protection zones that reduce the risks to citizens and firefighters.
- Initial Attack Success – Assess the initial attack fire suppression successes of wildland fires on lands of similar vegetation type. This is measured in terms of a percentage of fires that are successfully controlled before unacceptable costs and losses occur. The analyses can be used to determine the Department and Unit's level of service.
- Assets Protected – The plan utilizes a methodology for defining assets protected and their degree of risk from wildfire. The assets at risk addressed in the plan are life safety (citizen and firefighter), watersheds and water quality, timber, wildlife and wildlife habitat (including rare and endangered species), rural communities, unique areas (scenic, cultural, and historic), recreation, range, property in the form of structures, and air quality. Stakeholders for each of the assets at risk are identified; their input helps to guide the pre fire decision-making process of CDF and other fire service managers as well as that of the local Fire Safe Councils.
- Fire Management Prescriptions – Fire management prescriptions focus on alternative means of protecting assets at risk. Projects include a combination of fuel modification, ignition management, fire-wise planning and education, and pre-development planning. Specific activities include but are not limited to land use planning and associated regulation, educational programs and public information, department infrastructure including fire stations and water systems, fuels management and forest health. Pre fire management prescriptions will also

identify those who will benefit from such work and consequently those who should share in the project costs.

- Fiscal Framework – The State Board of Forestry and CDF are developing a fiscal framework for assessing and monitoring annual and long-term changes in California's wildland fire protection systems. This plan will incorporate Pre fire Workload Analyses (PWA), in an attempt to provide relevant data to guide in the development of the fiscal framework and public policy.

Applications of the Fire Plan Framework:

- Identify areas of concentrated assets and high risk for state, federal and local officials as well as the public.
- To provide citizens with the necessary information, which will enable them to identify public and private assets, design solutions, and carry out pre fire projects designed to protect those assets.
- Allow stakeholders, agency personnel, the private sector and the public, to come together in a common form through the Fire Safe Councils with the focus of reducing the threat and impact of wildfire. Through the cooperative efforts of the Fire Safe Councils and CDF identify and prioritize pre fire projects in order to allocate available resources in the most cost effective manner.
- Encourage an intergovernmental approach to reducing costs plus losses as the result of wildland fire.
- Enable policy makers and the public to focus realistically on what can and should be done to reduce future costs plus losses from wildland fire.
- Through the land use and safety element of the Tehama and Glenn County general plans, incorporate elements of the California Fire Plan so that the county plan supports the state plan.
- Allow the Tehama Glenn Unit to improve the efficiency of its fire protection system, by developing pointed solutions for identified deficiencies.

The computer based data and Geographic Information Systems (GIS) are utilized, which allows for a comprehensive analysis of fire hazards (fuels and severe fire weather), assets at risk, and level of service to be included in the Fire Management Plan. In short, the Tehama Glenn Unit Fire Management Plan systematically assess the existing level of wildland fire protection service, identifies high-risk and high-value areas where potential exists for costly and damaging wildfires, ranks these areas in terms of priority needs, and prescribes what can

be done to reduce future costs and losses. The fire plan assessment system has four components. They include:

- Level of Service (LOS)
- Assets at Risk (AAR)
- Hazardous Fuels
- Historic Fire Weather

The intent of the Tehama Glenn Unit Fire Management Plan is to document the findings of the fire plan assessment process; assist stakeholders with the pre-fire management decision-making, and communicate the fire problem and subsequent solutions to stakeholders and citizens. The 2000 Fire Management Plan looked at 10 years of data (1990 – 1999). Subsequent versions of the plan incorporate fire plan assessments built on the previous ten-year's data. This Fire Management Plan will also be used to coordinate pre fire activities with adjacent CDF Units, national forests and large private landowners. This plan provides the foundation for funding requests, which can be presented to federal, state and local agencies, public and private organizations, and the general public.

The Tehama Glenn Unit Fire Management Plan is the instrument by which pre fire planning activities are identified, prioritized and implemented through the cooperative efforts of local fire agencies and fire safe councils. Moreover, through the cooperative efforts of local fire agencies, fire safe councils, and county land use planners work to identify and effect changes in fire safe regulations has intensified. Pre-development standards, fire safe and evacuation planning, fuel hazard reduction and defensible space standards have manifested this effort.

The intent of this document is to provide a foundation from which communities can assume a cooperative role in the effort to improve fire and life safety. The content of this report is cooperative effort between the California Department of Forestry and Fire Protection and the Tehama Fire Council.

Unit Overview

The Tehama-Glenn Unit lies near the northern end of the Sacramento Valley. The Unit is made up of four field Battalions: Manton, Sacramento River, Red Bank, and Paskenta Battalions. Each of these Battalions consists of a distinct mix of geography, fuels, access issues, values at risk, and fire causes.

The Manton Battalion (1) lies in the northeast corner of the Unit entirely within Tehama County. The Battalion runs from the eastern foothills on the east side of the Sacramento Valley to the Lassen National Forest boundary on the east, and from the Butte County line in the south to the Shasta County line in the north.

Topography within the Manton Battalion includes rolling foothills in the west to mountain terrain in the east with predominate volcanic influence in geography. This area includes

several major drainages, which run generally east to west, such as Deer Creek, Antelope Creek, Mill Creek, and Battle Creek. These drainages form steep canyons, which present substantial access problems and promote rapid fire spread.

Fuels within the Manton Battalion consist of grass and oak woodlands in the lower foothills with increasing brush, pine, and mixed conifer forests as the foothills rise to mountains in the east. These grass fuels in the foothills and canyons have historically carried fast spreading, wind driven, high intensity fires with a moderate to high resistance to control, due to access problems.

Fires, such as the Manton Fire of 1998, occurring in the grass, oak woodland, brush mix, or the Gun Fires in 1999, which burned in timber, oak woodland, and grass present the greatest resistance to control and, when they occur, account for the greatest damage to natural resources and structures. Lightning fires such as those, which occurred in 1999 often, cause multiple starts and are difficult to access in a timely fashion. These fires account for many of the Unit fires that exceed 200 acres in size.

Values at risk within the Manton Battalion include extensive timber, rangelands, watershed, associated fisheries, and several rural communities and hundreds of isolated structures. The communities of Paynes Creek, Manton, Ponderosa Sky Ranch, and Mineral have historically suffered damage to homes and property during periodic fires in these areas. Periodic larger fires (Campbell, Gun II, Barkley and Finley) within the Battalion have caused widespread damage to range lands and fisheries and cost millions of dollars to suppress.

The Sacramento River Battalion (2) lies primarily within the Sacramento Valley and covers a large area of Local Responsibility Area (LRA). The Battalion generally covers the approaches to the eastern foothills, Vina Plains area, Los Molinos, City of Tehama, Dairyville, El Camino, Proberta, City of Red Bluff and Bend communities.

The Sacramento River and the valley floor with large areas of flat river bottomland providing good access dominate topography within the Battalion. Along the eastern edge of the Battalion, the topography rises into the foothills, towards the Manton Battalion in the east with restricted access due to volcanic rock. North of Red Bluff, the Battalion covers the rolling hills of the Bend area with some areas of difficult accessibility due to gullies and draws.

The fuels of the Sacramento River Battalion consist of annual grasses, which dominate the valley floor and oak woodland with isolated patches of brush in the foothills and Bend area. These fuels carry rapidly spreading, wind driven fires with low to moderate resistance to control once attacked.

Values at risk include the greatest concentration of residential, commercial, and industrial structures in Tehama County. Intermixed within this development are extensive areas of agricultural improvements such as orchards, cultivated fields, and associated outbuildings. Fast moving wind driven fires in this area each year do minimal damage to the agricultural products but often threaten or involve the associated residences and outbuildings.

The Red Bank Battalion (3) lies in the northwest portion of Tehama County and includes the communities of Lake California, Bowman, Dibble Creek, R-Wildhorse Ranch, Ridgeway, and Red Bank. The valley floor forms much of the eastern boundary, with the western boundary formed by the Mendocino National Forest and the Shasta-Trinity National Forest.

Topography and fuels within the Battalion are consistently rolling hills with grass/oak woodland fuels changing to brush and foothill or grey pine further to the west. In the most westerly areas, the rolling hills turn to mountains with the grass/brush/pine fuel type changing to a mixed conifer forest near the Mendocino National Forest Boundary. Access to the Battalion is varied with fair to good access existing in most of the eastern portion and fair to poor access existing in the west due to less development and steeper terrain.

Values at risk include a large number of residential and associated structures on large lot or ranchette settings. Typical fires include moderate to fast moving grass fires, which quickly threaten isolated groups or single residences. Historic records show occasional occurrence of high intensity large fires in the transition area from rolling hills to mountain terrain with heavier fuel loading and poor access. The area is also at risk from wind events.

The Paskenta Battalion (4) includes the LRA area of Tehama County near Richfield, Corning, and to the Tehama-Glenn County line south of Corning on the west side of the Sacramento River. It includes the State Responsibility Area (SRA) west of Interstate 5 and south, of the Red Bank Battalion, south to the Glenn-Colusa County line. This area is similar in topography and fuels to the Red Bank Battalion and shares many of the same types of fires and causes.

Communities within the Paskenta Battalion include Richfield, Corning, Rancho Tehama, Paskenta, Elk Creek, Chrome and Grindstone Rancheria. These communities, along with scattered ranch houses and residences along with rangeland, form the primary values at risk. Historically, fires within this Battalion include annual occurrences of fast moving grass fires with one or more growing to more than 200 acres in size. Frequent fires along Interstate 5 in southern Tehama County provide a threat to SRA lands.

Gary Durden



Acting Unit Chief

II. STAKEHOLDERS

A. Who are they?



Stakeholders are defined as any person, agency or organization with a particular interest "a stake" in fire management and the protection of assets from wildfires. The Tehama-Glenn Unit has made a considerable attempt at involving stakeholders and many of their interests in the planning of the Tehama-Glenn Fire Management Plan. It is the goal of the Tehama-Glenn Unit to encourage the participation of as many stakeholders as possible and to continually update planning efforts involving stakeholder input.

The Tehama County Fire Safe Council has been instrumental in bringing a diverse group of stakeholders to the table. The Unit is able to respond and adapt activities to address many of the concerns from the different stakeholders involved with the fire safe council. Through the council's diversity, agencies have been able to develop fire management and hazardous fuel reduction projects that otherwise may never have developed. More information about fire safe councils is available at the web site www.firesafecouncil.org.

B. Stakeholders (See Appendix 1 for complete list)

Watershed and Conservancy Groups

Battle Creek Watershed Conservancy

Sharon Paquin-Gilmore
Email: spaquin@shasta.com
<http://www.battle-creek.net/>

P.O. Box 560
Manton, CA 96059
(530) 474-3368

Mission Statement: To preserve the environmental and economic resources of the Battle Creek Watershed through responsible stewardship, liaison, cooperation, and education.

Cottonwood Creek Watershed Group

Vieva Swearingen
Email: ccwg@shasta.com
<http://www.cottonwoodcofc.org/ccwg/ccwg.htm>

P.O. Box 1198
3233 Brush Street
Cottonwood, CA 96022
(530) 347-6637
FAX (530) 226-9622

Mission Statement: To preserve the environment, private property and water rights and economic resources of Cottonwood Creek watershed through responsible stewardship, liaison, cooperation and education.

Tehama-Glenn Unit
Fire Management Plan
2004

Deer Creek Watershed Conservancy

Diane Gaumer

Email: dcwcdianne@shocking.com

<http://deercreekconservancy.com/index.html>

P.O. Box 307

Vina, CA 96092

(530) 891-8636

Mission Statement: To preserve natural resources, and maintain private property rights & responsible land stewardship.

Mill Creek Conservancy

Mike Mitzel

Email: mmitzel@spi-ind.com

<http://www.csuchico.edu/watershed/millcreek>

P.O. Box 188

Los Molinos, CA 96061

(530) 384-2734

FAX (530) 595-4470

Mission Statement: To ensure that Mill Creek retains its historical pristine condition by promoting resource protection and compatible land uses that help sustain its outstanding natural environment.

Reeds – Red Bank Landowners Group

Tehama County Resource Conservation District

Vicky Dawley

Email: vicky-dawley@ca.nacdnet.org

2 Sutter Street, Suite D

Red Bluff, CA 96080

(530) 527-3013 ext. 3

FAX (530) 527-7451

Mission Statement: To enhance 40,000 acres of chaparral belt land and associated areas in order to make the area more productive and safe for the social, financial and environmental needs of the temporary stewards of the land.

Sunflower Coordinated Resource Management Plan (CRMP)

Coordinator: Bill Burrows

Email: sunflowercrmp@msn.com

12250 Colyear Springs Road

Red Bluff, CA 96080

(530) 529-1535

Fax (530) 529-1515

Mission Statement: To enhance 40,000 acres of chaparral belt land and associated areas in order to make the area more productive and safe for the social, financial and environmental needs of the temporary stewards of the land.

The Nature Conservancy

Peter Hujik

Email: phujik@tnc.org

<http://www.tnccalifornia.org>

11010 Foothill Road

Los Molinos, CA 96055

(530) 527-0420

FAX (530) 527-0384

Mission Statement: To preserve the plants, animals, and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive.

Fire Safe Councils

The Tehama Fire Council was formed in 2000 as an advisory group with the goal of aiding other fiscal agents (e.g. the local Resource Conservation District, watershed groups, etc.) in coordinating countywide fire management activities and finding funding for specific projects. The Tehama Fire Council and the Cottonwood Creek Watershed Fire Safe Council are integral to the fire management activities within the Tehama-Glenn Unit.

Cottonwood Creek Watershed Fire Safe Council

Coordinator: Vieve Swearingen

Email: ccwg@shasta.com

P.O. Box 1198

3233 Brush Street

Cottonwood, CA 96022

(530) 347-6637

FAX (530) 347-6346

Mission Statement: To preserve the natural and manmade resources in Cottonwood Creek watershed by mobilizing the watershed residents to make their homes and communities fire safe through education and preparation.

Tehama Fire Council

Thomas McCubbins

Email: tom@tehamacountyrcd.org

www.firesafecouncil.org

2 Sutter Street Suite D

Red Bluff, Ca 96080

(530)527-3013 ext 120

Fax (530)527-7451

Mission Statement: The Tehama Fire Safe Council will seek to harmonize fire management and community fire prevention programs.

1. To provide a forum for sharing information and coordinating fire management efforts among people involved in wildland fire management in Tehama County.
2. To provide a forum between public and private sector organizations that share a common interest in wildfire prevention and loss mitigation. The Tehama Fire Safe Council will help to preserve natural and manmade resources by mobilizing residents to make their homes neighborhoods and communities fire safe. The council works to meet this goal by combining the expertise, resources and communication channels of its members. Other Fire Safe Councils are likely to become established to address fire prevention and loss reduction projects.

Industrial Groups



Sierra Pacific Industries (SPI)

Mike Mitzel

Email: sierra@spi-ind.com

<http://www.spi-ind.com>

P.O. Box 496028

Redding, CA 96049

(530) 378-8000

(530) 378-8242

Mission Statement: To conserve the productive basis of the land and associated resources by maintaining the integrity of biological and ecological processes while producing commodities and other services through the concept of sustainable forestry.

Governmental Agencies

Department of Interior – Bureau of Land Management

Representative: Walter Herzog, Fire Management Officer

Email: walter_herzog@ca.blm.gov

355 Hemsted Dr.

Redding, CA 96002

(530) 224-2124

Glenn County Board of Supervisors

Representative: Tom McGowan

Email: info@coountyofglenn.net

P.O. Box 391

Willow, CA 95988

(530) 934-6400

Resource Conservation and Development District

Larry Akin

Email: larry.akin@ca.usda.gov

Willow Service Center

132 N. Enright St.

Willows, CA 95988

(530) 934-2205

Tehama County Resource Conservation District

Vicky Dawley

Email: vicky-dawley@ca.nacdnet.org

2 Sutter Street, Suite D

Red Bluff, CA 96080

(530) 527-3013 ext. 3

FAX (530) 527-7451

Tehama County Board of Supervisors

Representative: Charles Willard

322 Pine St.

Red Bluff, CA 96080

(530) 527-4655

C. Fire Safe Planning and Hazardous Fuels Reduction at a Glance

California has some of the most complex ecosystems in the world with over 600 recognized individual ecotypes. Human impact on the land has forever changed many of these ecotypes and as greater numbers of people come into contact with the land, the changes become more profound. The full spectrum of fire management issues are represented in the Tehama-Glenn Unit, from wildland/urban interface issues and associated mechanical thinning treatments, to wildfire response and fire suppression, to prescribed fire as a land management tool.

This impact takes the form of extensive development adjacent to wildlands—called *wildland/urban interface*--or small developments built within and surrounded by wildlands--called wildland/urban intermix. Construction within the wildland urban interface or intermix has not only added a new fuel load component, it has shifted the focus of firefighting tactics to life, safety, and structure protection. The impacts brought about by people, however are not all negative with regard to fire risk as many landowners modify the fuels on their property in order to provide for fire defense. However, many individuals totally disregard the hazard and do nothing to protect themselves against wildland fire.

The effects of poor logging practices have changed the once mature forests, dominated by relatively few large conifers and little under-story fuels, with natural surface-fire-regimes into second growth forests where catastrophic fire is more prevalent. Mixed conifers and hardwoods with a relatively heavy accumulation of understory fuels make them prone to intense fire behavior and typify these second growth forests. Moreover, environmental and political constraints, including fire suppression, have added to the fuel accumulation, particularly understory fuels, in the second growth forests.

Chaparral in the middle elevations requires fire for regeneration. Fire maintains habitat values associated with chaparral by prompting sprouting for deer browse and maintaining an open structure for other wildlife and livestock. On the west side of the Tehama/Glenn Unit, chaparral is actively being managed within the Sunflower CRMP project area. On the east side, where access is poor and lightning strikes are frequent, a minimally altered fire regime continues and maintains the ecological health of the ceanothus dominated chaparral there. Agency fire exclusion practices has proved to be less successful on the east side

Low elevation oak woodlands and grasslands have been dramatically altered by the invasion of exotic species, such as yellow star thistle (*Centaurea solstitialis*) and medusa-head grass (*Taeniatherum caput-medusae*) that compete with native plants and reduce forage quality. In Tehama County, some landowners are controlling invasive weeds through prescribed fire in late spring. This is an example of a contemporary application of fire as a land management tool. Chemical treatments of exotic weeds are also practiced.

Human intervention is neither wholly the problem nor wholly the solution to the fire situation. Understanding the fire environment within each ecosystem, including the complexities brought by people, and having sufficient resources to address fire issues specific to each ecosystem

Tehama-Glenn Unit
Fire Management Plan
2004

almost defies resolution. Despite the best efforts of fire service professionals, resource managers and other stakeholders, large, damaging, costly fires will continue. The relative success of fire safe planning and hazardous fuel reduction efforts are largely dependent upon the understanding of the fire environment within a particular ecosystem, cooperation on the part of stakeholders, and the availability of resources, financial and otherwise.

It is through the forum of fire safe councils that industrial, agricultural, homeowner, environmental, and governmental concerns must find common ground, applying science, politics and available resources for the common benefit of reducing the risk of fire on a watershed by watershed basis. The chart below shows some of the assets being protected within Tehama and Glenn Counties.

Tehama and Glenn County 2000 Census Data				
County	Acreage	Population	Assessed Value	Number of Households
Tehama County	1,888,640	56,039	\$2,573,452,795	21,013
Glenn County	841,600	26,453	\$1,480,967,680	9,172

Data for acreage, population, and number of households derived from 2000 Census Data for each county. Assessed value indicates the 1998-99 fiscal year "Grand Total State and County Assessed Valuation" of each county as reported by Kathleen Connell in the Assessed Valuation Annual Report for the fiscal year ending June 30, 1999.

D. Assets at Risk



The primary goal of wildland fire protection in the Tehama-Glenn Unit is to safeguard the wide range of assets found within the Unit with appropriate fire management. The wildland fire protection system is being created and funded to protect both public and private assets at risk. The following have been identified and delineated as either economic or non-economic assets at risk

from wildfire in Tehama and Glenn Counties: persons, structures, wildlife, timber, range, watersheds, ecosystem health, air quality, and unique scenic, historic and recreation areas.

Assets at risk in the Tehama-Glenn Unit were evaluated at the 450-acre scale. The Department designated the 450-acre scale for planning purposes, because it provides a manageable scale. This designation is based on the sectioning of a USGS 7.5 minute quadrangle map broken down into a 9 x 9 grid pattern; the result is squares of 450 acres. The 450-acre cells are referred to as *Quad 81st* or *Q 81st*. Fire plan assessments have been made at the Quad 81st level. For example, each Q 81st in Tehama-Glenn Unit has a ranking applied to it for Assets at Risk (AAR).

Fire protection resources are limited primarily by budget constraints. As a result, these resources are allocated, in part, based on the value of the assets. The assets are ranked high, medium and low, as to their susceptibility to wildfire. The ranking is scaled to the Q81st and transferred to GIS maps. Map overlays were evaluated by Unit staff, and areas with the highest combined asset values and fire risk were targeted for fire management activities. The scores for the various assets at risk were given a one (low) score out of a possible 9.999 (high) except for the following assets: game wildlife, historical buildings, and ecosystem health were all given scores of zero, as the data is not yet available or in different stages of validation at a state level. Infrastructure, non-game wildlife, and range scores were given a rank of two. Timber was given a three and structures were given a five (see priority areas in the Tehama-Glenn Unit fire plan). Many factors are involved in target area identification, including political climate of the region and suppression cost reductions. For more information regarding the evaluation of asset susceptibility, refer to the California Fire Plan is available at the following website: <http://www.fire.ca.gov/FireEmergencyResponse/FirePlan/FirePlan.asp>

Tehama-Glenn Unit
Fire Management Plan
2004

The process of explicitly enumerating assets at risk also helps to identify who benefits from the protection afforded those assets. It is a premise of the California Fire Plan, from which this plan is structured, that those who benefit from the protection of an asset should pay for that protection. Within the Tehama-Glenn Unit, many fire management and fuel reduction projects have been completed through the cooperative efforts of fire safe councils and CDF.

The communities in Tehama and Glenn Counties listed in the table below are on the National Registry available at the following site <http://firesafecouncil.org/about/communitiesatrisk.html>.

FIRE THREATENED COMMUNITIES IN TEHAMA AND GLENN COUNTY

<u>No.</u>	<u>Community Name</u>	<u>Federal Threat¹</u>	<u>Hazard Level²</u>
85	Bend	×	2
133	Bowman	×	3
257	Corning		3
283	Dairyville		2
350	Elk Creek	×	3
466	Hamilton City	×	3
635	Live Oak		3
656	Los Molinos	×	2
678	Manton	×	3
706	Mill Creek	×	3
711	Mineral	×	3
813	Orland		2
835	Paskenta	×	3
840	Paynes Creek	×	3
902	R-Ranch	×	3
920	Red Bluff	×	3
1204	Wilcox	×	2
1212	Willows		2

1. Federal Threat code of x indicates some or all of the wildland fire threat to that community comes from federal (e.g., US Forest Service, BLM, Dept. of Defense) lands.

2. Hazard Level code indicates the fire threat level, where two denotes moderate threat and three denotes high threat.

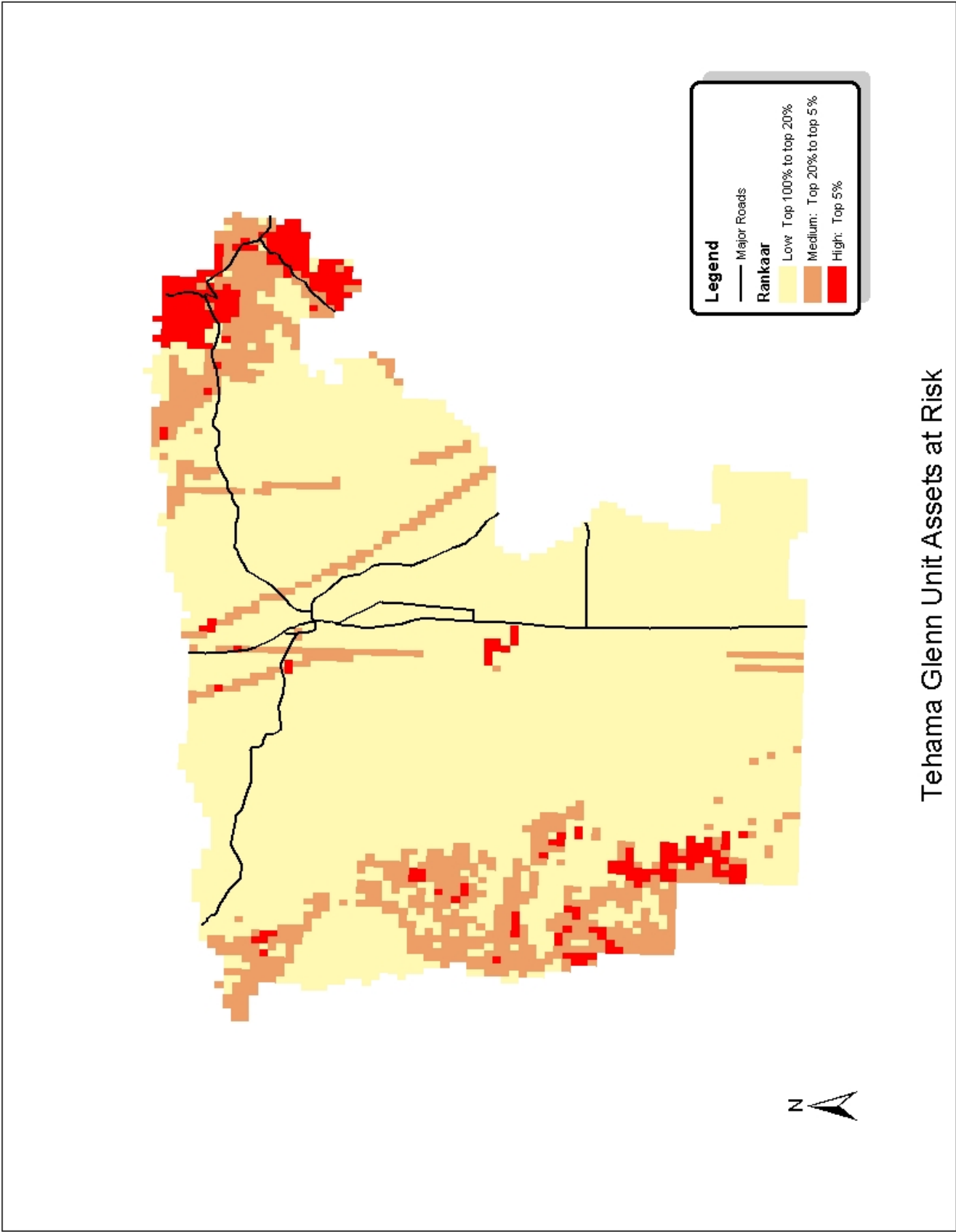
The following communities in Tehama and Glenn Counties are not listed on the National Registry, but may be at risk: Artois, Butte City, Chrome, Dales, Dibble Creek, El Camino, Flournoy, Gerber, Glenn, Grindstone Rancheria, Lake California, Ponderosa, Proberta, Rancho Tehama, Red Bank, Richfield, Ridgeway, Sky Ranch, Vina, and Tehama.

The following maps display the various levels of the assets at risk within Tehama and Glenn Counties. The "Total Assets at Risk" map uses an aggregate score for all assets at risk based on assigned weights for each category. The assets at risk include watersheds, soil erosion,

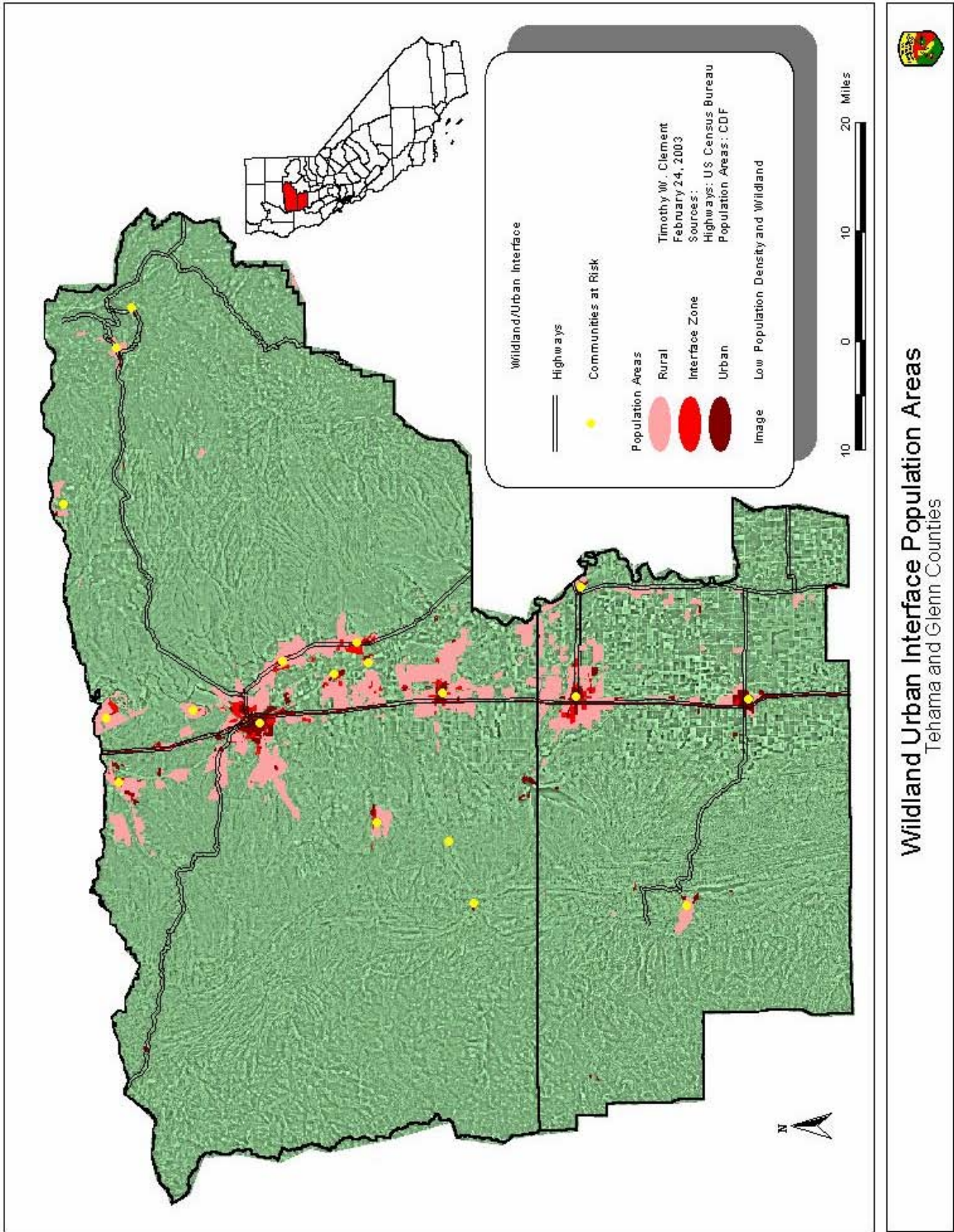
scenic, timber, range, air quality, historic buildings, recreation, structures, non-game wildlife, infrastructure and ecosystem health.

From the "Population Density" and "Wildland Urban Interface Population Areas" maps, large concentrations of people have been identified in the Red Bluff and Corning, areas of Tehama County, and the Orland and Willows areas of Glenn County. The density is based upon census block information from the 2000 census. Census blocks are not geographically similar in size; however, the severity of the urban interface problem can be inferred from the population density and hence housing density. Year 2000 census data indicates that the average number of residents per household is 2.62 and 2.84 for Tehama and Glenn Counties respectively. The introduction of humans has added fuel, in the form of structures, increasing the total fuel loading. Areas that show population density of 1,000 or more people per square mile are considered *urban*. The urbanization of California's wildland counties has resulted in a complex fire environment known as the *wildland urban interface* or I-Zone making it extremely difficult for fire protection agencies to protect life and property.

Tehama-Glenn Unit
Fire Management Plan
2004



Tehama-Glenn Unit
Fire Management Plan
2004



III. GENERAL DESCRIPTION OF THE CURRENT FIRE PROBLEM

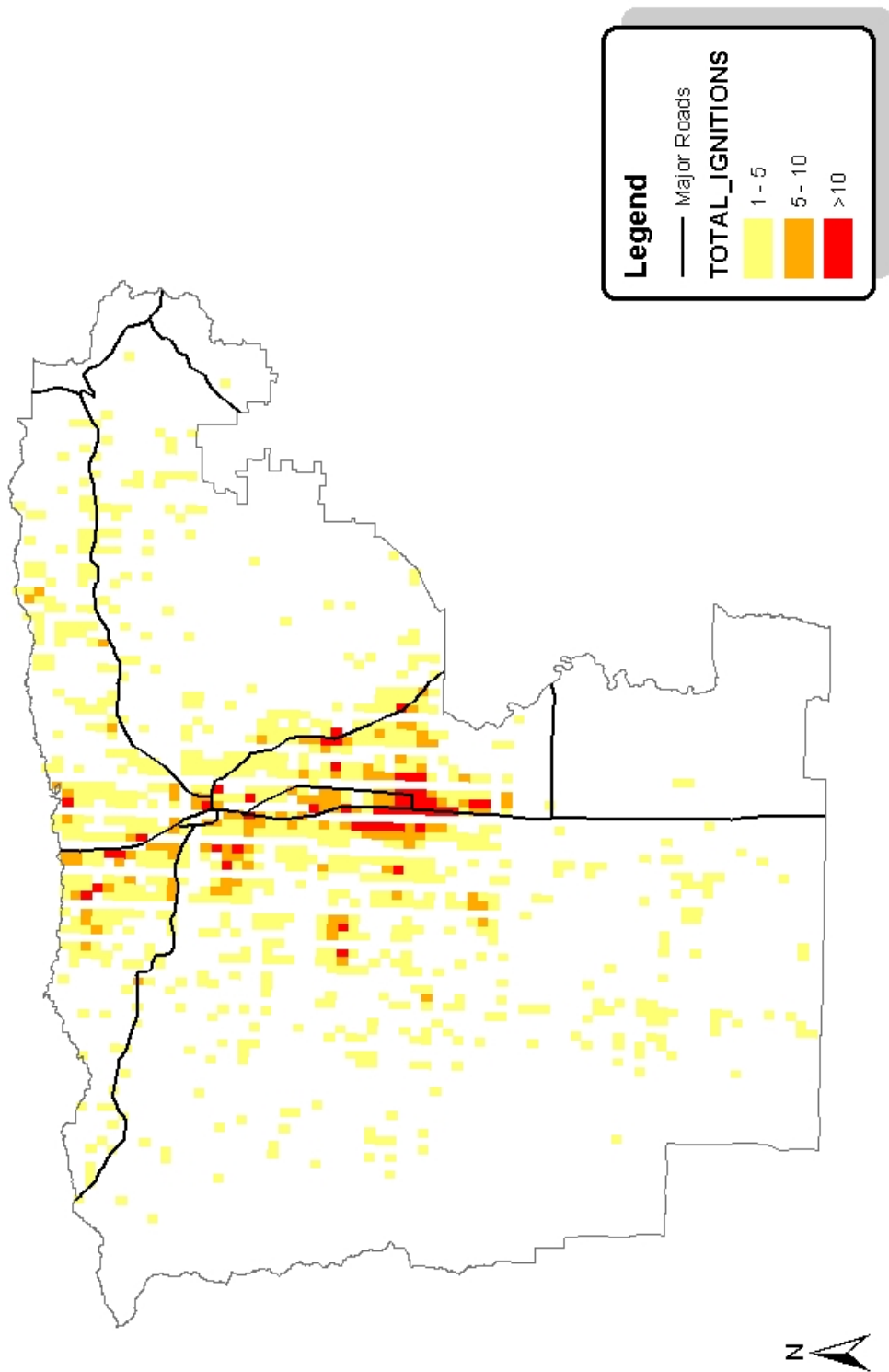
A. Fire History and Ignition Workload Assessment



The success of firefighting is the result of many complex factors, including the mobilization of critical resources in a timely manner. The California Department of Forestry and Fire Protection (CDF) does not fight fire alone; rather it relies on the assistance of federal and local government firefighting resources through a series of interagency agreements. Interagency agreements include the Cooperative agreement, delineating the use of local government resources by state and federal firefighting agencies [CDF, U.S. Forest Service (USFS), Bureau of Land Management (BLM) &

National Park Service (NPS)], and local mutual and automatic aid agreements whereby local entities agree to share resources during emergencies. There are many such agreements between federal, state and local jurisdictions within Tehama and Glenn counties.

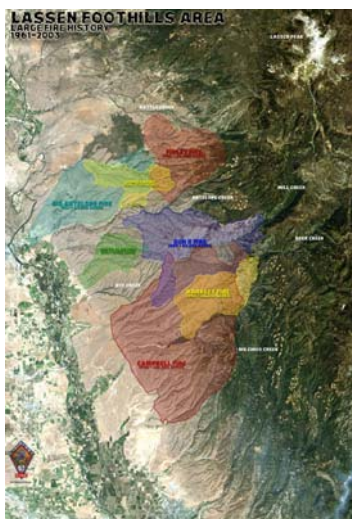
Ignition workload assessment focuses on identifying areas with the potential of experiencing unacceptable loss and high suppression cost fires. In this assessment, Unit staff analyzed historical ignition data by damage, cause, intensity, and vegetation type. Workload patterns can be used to infer areas in the unit with a higher potential for costly damaging fires. This data allows the unit to develop appropriate workload management strategies and tactical actions including prevention and suppression.



Tehama Glenn Unit Fire Workload

Tehama-Glenn Unit
Fire Management Plan
2004

Fire History



Wildfire history is a significant factor in the pre-fire management planning process. The fire plan assessment framework incorporates detailed information for determining the most beneficial locations for pre-fire management projects, an idea of the level of service within the Unit's State Responsibility Area and information about assets at risk. Fire history is a piece of the puzzle that allows Unit personnel to learn from the effects of past fires and allows fire control agencies, like CDF and fire safe councils, the opportunity to implement pre-fire management plans. Identifying where the largest and most damaging fires have occurred is a necessary step in preparing for future wildfire and focused pre-fire management plans. Moreover, knowledge of fire history and fire behavior for particular areas allows fire control officers to develop better strategies for the deployment of critical firefighting resources.

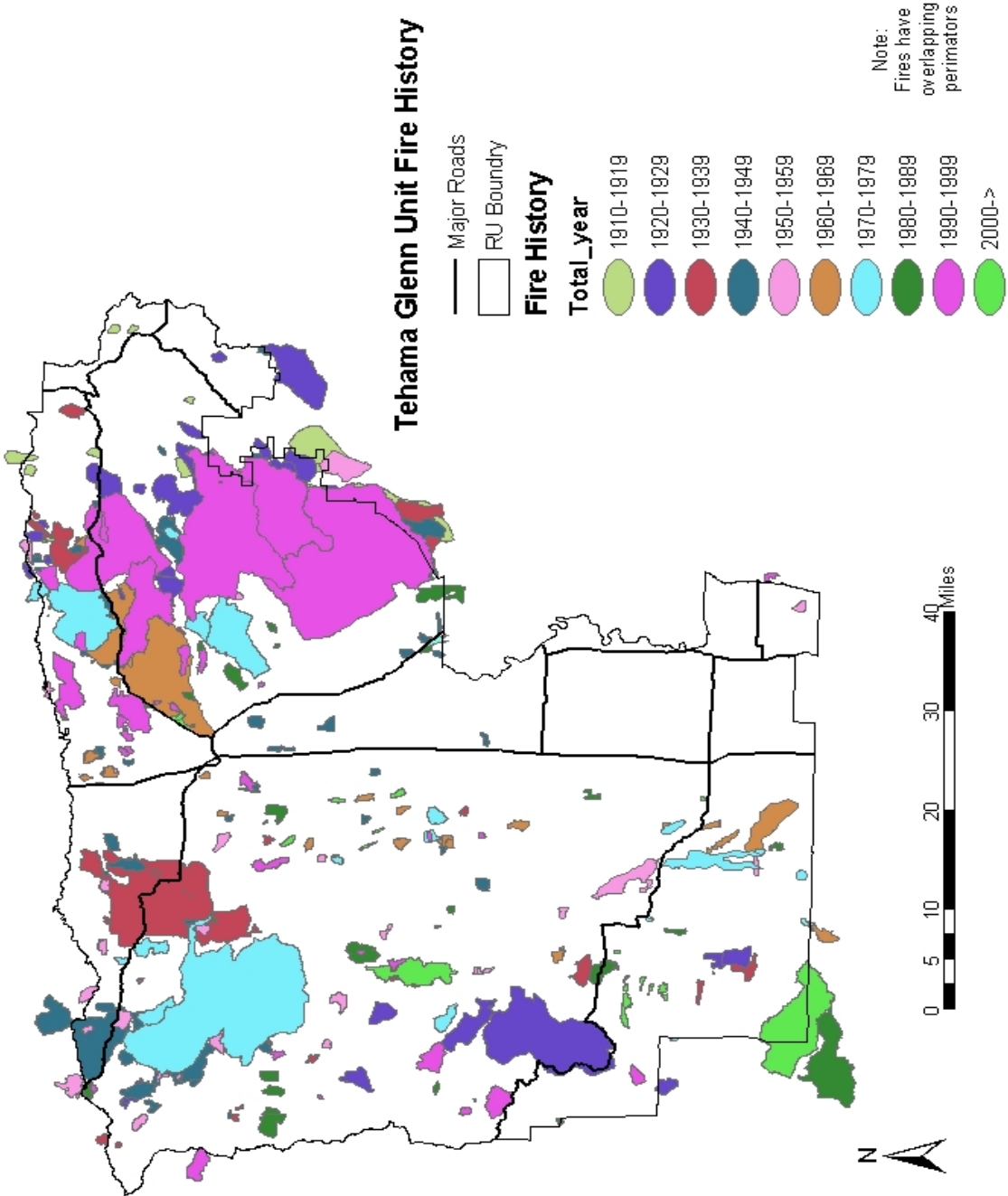
Below is the wildfire history for the Tehama-Glenn Unit between 1992 and 2002 and maps representing fire history for the past 100 and past 10 years. The fires shown are 300 acres and larger. The maps display significant patterns that are being used in the pre-fire planning process. Tehama and Glenn Counties both have an extensive history of large and damaging fires, most of which have burned within the urban interface area resulting in not only the loss of property but life. The following tables and figures show the fire history of Tehama and Glenn Counties.

Cause		Zone											Total
		1	2	3	4	5	6	7	8	9	10	LRA*	
1	Undetermined	13	45	9	10	3	9	12	3	90	7	124	325
2	Lightning	15	10	7	12	11	2	1	10	20	9	6	103
3	Camp Fire Escape	2	1	0	0	0	2	0	1	6	2	5	19
4	Smoking	3	28	0	3	5	7	5	3	29	2	77	162
5	Burn Barrel/Debris Burn	5	32	3	9	2	15	3	3	43	5	150	270
6	Escape	3	36	3	4	1	19	9	7	28	4	48	162
7	Arson	21	120	16	12	9	46	30	11	185	30	305	785
8	Equipment Use	4	22	0	3	0	3	2	1	9	3	29	76
9	Playing W/Fire	8	61	8	5	1	19	8	18	48	9	87	272
10	Other	20	54	11	8	5	12	10	14	93	11	157	395
11	Vehicle Use	0	6	0	0	0	0	0	0	0	0	1	7
12	Railroad	0	8	0	4	4	2	1	3	8	6	37	73
12	Powerline	0	8	0	4	4	2	1	3	8	6	37	73
Total		94	423	57	70	41	136	81	74	559	88	1026	2649

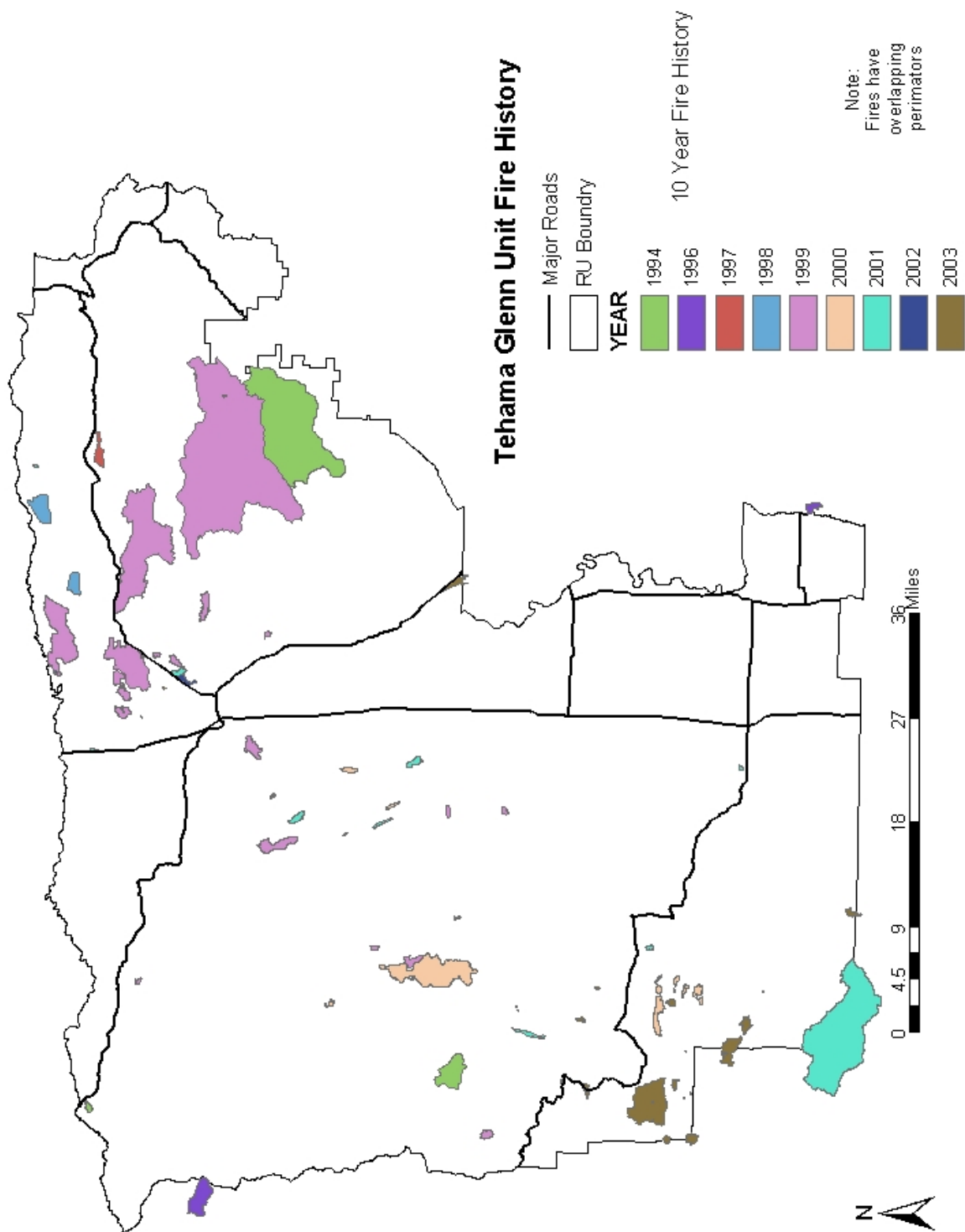
Table. Fire Cause Summary Report (1993 to 2003)
California Department of Forestry and Fire Protection, Tehama-Glenn Unit

*LRA: Local Response Area

Tehama-Glenn Unit
Fire Management Plan
2004



Tehama-Glenn Unit
Fire Management Plan
2004



B. Fuels

Photo Below is a aerial shot over the Gun II Fire. Typical post-fire stand showing incomplete consumption but nearly complete mortality. Post-fire conditions may increase fire hazard during the following years due to the snags and dead and down material unless the timber is salvaged soon after the fire.



The fuel assessment layer exemplifies the local fire hazard situation. Fuels assessment is a useful tool in assisting pre-fire planners and fire safe councils target critical areas for fuel treatment.

This assessment evaluates current flammability of a particular fuel type, given location on the slope, average bad weather conditions, ladder fuels, and crown density.

Fuel, in the context of wildland fire, refers to all combustible material available to burn within a given area of land. Grass, brush and timber are the most common fuels found in

Tehama and Glenn Counties ecosystems. Each fuel has its' own burning characteristics based on several inherent factors. These factors include moisture content, volume, live to dead vegetation ratio, size, arrangement and the general chemistry of the plant species. All of these contribute to a fire's spread, its intensity, and ultimately, its threat to assets.

Fuel loading is measured in tons per acre. Grass is considered a light fuel with approximately 0.75 ton per acre. On the other end of the spectrum, thick brush, a heavy fuel, can have a volume of over 21 tons per acre. Fire intensity is directly related to fuel loading. Grass burns rapidly with a short period of intense heat output. Brush, on the other hand, has a long sustained high heat output making it more difficult to control. With this in mind, it is prudent to identify areas containing heavy concentrations of fuel and target these areas for hazard reduction. Timber has a high fuel loading based on tons per acre. However, fire intensity can be higher or lower based on the percentage of the vegetation that is available to the fire. Conifer and oak trees where there are few ladder fuels that carry flames into the canopy can often be immune to a fire in the understory.

Hazardous Fuels Assessment

Fuel arrangement is critical in wildland fire behavior, as it is linked to how readily the fuel burns and a fire spreads. Fine fuels that have not been compacted, such as grass, spread fire rapidly since more of its surface can be heated at one time. Compacted fuels, such as pine litter, on the other hand burn more slowly because heat and air only reaches the top of the fuel. Vertical arrangement refers to the continuity of fuel from the forest floor to the tree canopy. The vertical arrangement of fuels measures the extent to which burnable vegetation on the ground such as grass or pine needles is connected to the tops of the trees. Fire burning in grass or pine needles near the ground may spread to brush, snags and low tree branches to the crown of overstory trees. When there is a continuous burnable constituent from the ground to the crown, it is considered a "ladder fuel". Ladder fuels are an extremely influential factor in fire spread and behavior, often turning a ground fire *into* a crown fire. Crown or canopy closure refers to the density of a forest created by *treetops*. *It is important* in the lateral progression of fire from tree to tree through the forest canopy.

In an attempt to estimate fire behavior, the U.S. Forest Service has developed 13 fuel models that categorize fuels by their burn characteristics shown in the table below. Four general groups, also known as planning belts, are used to classify fuels: grass, brush, timber and logging slash. The following is a brief description of the fuel models commonly found in CDF's wildland protection area of Tehama and Glenn Counties:

Source material: Anderson, Hal E. 1982 Aids to Determine Fuels Models For Estimating Fire Behavior. United States Department of Agriculture, Forest Service. General Technical Report INT-122. Ogden Intermountain Range and Experiment Station)

Fuel Model 1: This model is used for short (generally below knee level or about 1-foot tall) fine-textured grass, which best represents Northern California grasslands and savannas. Less than one-third of the area includes taller other vegetation like shrubs or trees. Fuel loading in fuel model 1 range from $\frac{1}{2}$ to $\frac{3}{4}$ of a ton per acre. Fires in fuel model 1 burn rapidly with flame lengths averaging 4 feet. This is probably the most common fuel model within the Tehama-Glenn Unit, reflective of nearly all of the grasslands found in Tehama and Glenn Counties below an elevation of approximately 1000 feet. Timberlands that are clearcut and replanted may temporarily become FM1 if a substantial grass stand is allowed to become established. As the seedlings begin to assert dominance over the site during years 5-15, the setting may transition into a brush model

Fuel Model 2: Like fuel model 1, fuel model 2 is dominated by grass about 1 to 2-feet tall, usually under an oak-woodland or timber over-story. The larger particle size in these shrubs and the litter from the tree over-story increases intensity, but fire spread rate is reduced because canopy slows wind effect and shades fuels. Four to five tons of fuel is found per acre and the fuel bed depth is 1-2 feet. This type of fuel can be found in the foothills in the eastern and western portion of the unit east and west of Red Bluff.

Fuel Model 3. Not found locally. May represent commercial wheat or rice operations.

Fuel Model 4: This is a brush model and is characterized by stands of mature brush 6 feet or more in height with continuous, inter-linking crowns, and ranging from 15 to 80 tons per acre. Fires in this fuel model burn intensely (50+ foot flame lengths) and spread relatively quickly. This fuel type is found in some areas in the eastern and western foothills of the Unit.

Fuel Model 5: Fuel model 5 is composed of the same mixes of vegetation as Fuel Model 4, but individual plants are shorter, usually sparser, and less mature with little or no dead component. This model occurs on poor soils, on recent burns and may occur under tree over-stories. Fires in this fuel type do not burn as intensely (6-13 foot flame lengths), nor rapidly due to higher concentrations of live to dead fuel. This fuel type is not common in Tehama and Glenn Counties. It may represent a recently burned chamise field and some of the brushland on serpentine soils such as portions of the foothills around Colyer Springs Road (aka chrome-mining lands). This model may also represent the fuels under a shaded fuelbreak where the grass does not immediately recolonize the site. Shaded fuelbreaks along roads above the Hazen Road elevation have the potential to have lighter burning potential because the brush is vastly reduced but the site does not become a grass model. The jury is still out to see if we can sustain our fuelbreaks as a low—intensity type. If so, it could be modeled as a FM5.

Fuel Model 6: This fuel model consists of vegetation, which is taller and more flammable than that of fuel model 5, but not as tall or as dense as fuel model 4. Fires in this model will burn in the foliage of standing vegetation, wind speed is the critical factor. Fires burn with an average flame length of 6 feet and spread at a rate of 2,112 feet/hour. Interior live oak, young chemise aged 10-30 years and manzanita are all associated with this fuel model. In many instances, a fuel model 5 will evolve into a fuel model 6 by the latter part of summer. This fuel type is found interspersed with fuel model 4 in the foothills. In timber plantations, pole stands may best be represented as brush models prior to the time that the canopies begin to be isolated from the ground. Conifer pole plantations evolve to FM4 or FM6 depending on intermediate cultural treatments such as pruning, thinning and slash treatment.

Fuel Model 8: This model reflects slow burning, low intensity fires burning in the leaf or needle litter under a conifer or hardwood canopy. Fuel model 8 contains few fine fuels (about 1-2 tons per acre) consisting of compacted leaf and short needle conifer litter and is absent an under story shrub layer. These fires do not pose a threat unless low fuel moisture or high winds allow the fire to spread into the canopy. This model is found in black-oak dominated woodland, in high elevation true-fir stands and locally in areas treated for fuel reduction. It represents the ideal model; where fire behavior is characterized by low-intensity, slow burning ground fire. This type of vegetation is found in small western portions of Tehama County in the narrow band between

chaparral and mixed-conifer timberland and in elevations over 6000 feet where white and red firs dominate.

Fuel Model 9: Much like fuel model 8 this model has little or no shrub layer but has more fine fuels (about 2-4 tons per acre), which is deeper, and “fluffier” like oak leaves and long conifer needles. Fires in this model also burn with more intensity and higher rates of spread, especially under windy conditions. This model is found in a wide range of areas under timber stands, which have been treated for fuel reduction, or have seen low intensity fires over the last decade. This fuel type is found in vast acres in the 2,500 to 4,000 foot ponderosa pine dominated elevation of eastern Tehama County. Fuel Model 9 is also extremely prevalent throughout far western portions of the Unit.

Fuel Model 10: Fuel model 10 usually has a shrub or immature tree under story with loadings of fine fuels of about 3 to 4 tons per acre and heavy loadings of 12+ tons per acre. Fires in this timber model burn with greater intensity (6-10 foot flame lengths) with moderate rates of spread. Torching of individual trees is common and can cause embers to start new “spot” fires ahead of the main fire. Crown fires are also a substantial threat in this fuel type. In dry conditions, or with high winds, fires in fuel model 10 can be very difficult to control. This model is characterized by stands of overstocked managed timberland and unmanaged natural conifer stands that can be found in the far eastern and western portions of the unit.

Fuel Model 11: Fuel model 11 results from timber operations where a heavy slash component is still present. FM11 Can consist of the felled boles of a thinned stand (precommercial) or the limbs and tops from a heavy logging operation. Recent deposited slash (“red slash”) may be 3+ feet deep and will have about the same burning characteristics as Fuel Model 4. Aged slash will likely burn more like Fuel Model 10. Loading is about 12 tons-per-acre and the fuel bed depth is about 1-foot. Where a commercial biomass operation is conducted coincidental with the timber operation, or where other fuel-reduction treatments (underburning, pile & burn) are conducted, the slash represented by FM11 does not form. This fuel model is found in the actively managed commercial timberlands both on the east and west sides.

Tehama-Glenn Unit
Fire Management Plan
2004

**National Wildfire Coordinating Group Fuel Models
Tehama-Glenn Unit Description**

Fuel Model #	Fuel bed depth (feet)	Tons per acre (live)	Tons per Acre (dead)	Flame Length (feet)	Spread Rate (feet/hour)	Comments
1	1	0	.74	4	5195	Dry grass. Common in areas under 1000' elevation.
2	1	.5	4	6	2331	Dry grass with 1/3 to 2/3 brush or tree canopy. Very common above 1000'.
3	2.5	2.5	3.01	12	6926	Grass model, not found locally.
4	6	5.01	16.03	19	4995	Thick brush with heavy dead component.
5	2	2	3.5	4	1199	Young or green brush with fire in the litter only.
6	2.5	2.5	6	6	2131	Mature or dry brush with foliage that will burn when exposed to wind.
7	2.5	2.5	4.87	5	1332	Brush model, not found locally.
8	.2	.2	5	1	107	Timber or hardwood with fire burning in light litter underneath. No shrub.
9	.2	.2	3.48	2.6	499	Timber with fire in slightly heavier litter than model 8
10	1	1	12.02	4.8	526	Timber with shrub/immature tree understory, heavy dead material underneath.
28	1	1	11.52	3.5	400	Light logging slash from a partial thinning operation
97						Agricultural Lands
98						Water
99						Barren/Rock/Other

Shading denotes predominant fuel models of Tehama and/or Glenn Counties.

The local distribution of the fuel models is illustrated in the above table. It can be noted that the diversity of combustible material, both in terms of species and arrangement, increases with elevation. Models 1 and 2 (grass fuel models) are found at lower elevations up to about 1,500 feet, progressing into brush and from their timber at the 2,300 foot elevation generally. Local conditions, known as microclimates also affect fuel type and density. For instance, north-facing slopes tend to retain more soil moisture and receive less sun favoring the development of hardwood and succulent species. In contrast, southern exposures are subject to more open

growth conditions, grass, brush and conifer species, which have adapted to drier, poor soil conditions.

The first step in defining hazardous fuels is the development of a vegetation coverage layer for the Tehama-Glenn Unit using GIS. Planning belts have been established to categorize the various fuel types in to four general areas (grass, brush, timber, and woodland) consisting of similar fuels. Moreover, these zones have similar fire behavior characteristics that impact fire suppression activities, and are based on the Fire Behavior Prediction System (FBPS) fuel modeling correlation.

The vegetation within the planning belts is then categorized into the FPBS fuel model coverage as described in the National Wildfire Coordinating Group Fuel Models on the previous page. After the vegetation coverage was completed, Arcview GIS was used to display the vegetation coverage overlaid with the Unit's fire history. Through analysis, the impact on surface fuel characteristics because of past fires was factored into the creation of a final vegetation layer. The final product is a more accurate account of the current "post fire" vegetation coverage's throughout the Unit, and thus, FBPS fuel characteristics.

The final phases of determining fuel hazard ratings for the Tehama-Glenn Unit involves the combining of crown fuel characteristics and surface fuel characteristics. The method attributes additional ladder and crown fuel indices to surface fuels in a given area. If the vegetation data provide sufficient structural detail, the method inputs these additional indices from that data. If the vegetation data lacks structural detail, the method inputs indices based on the fuel model alone. In the Tehama Glenn Unit, the majority of indices were based on the FPBS fuel models.

The total hazard rating includes not only hazards posed by surface fire, but also hazards by involvement of canopy fuels. The hazard ranking method includes this additional hazard component by adjusting, upgrading, the surface hazard rank according to the value of the ladder and crown fuel indices. Specifically, the surface hazard rank increases a maximum of one class in all situations where the sum of the ladder and crown fuel indices is greater than or equal to two.

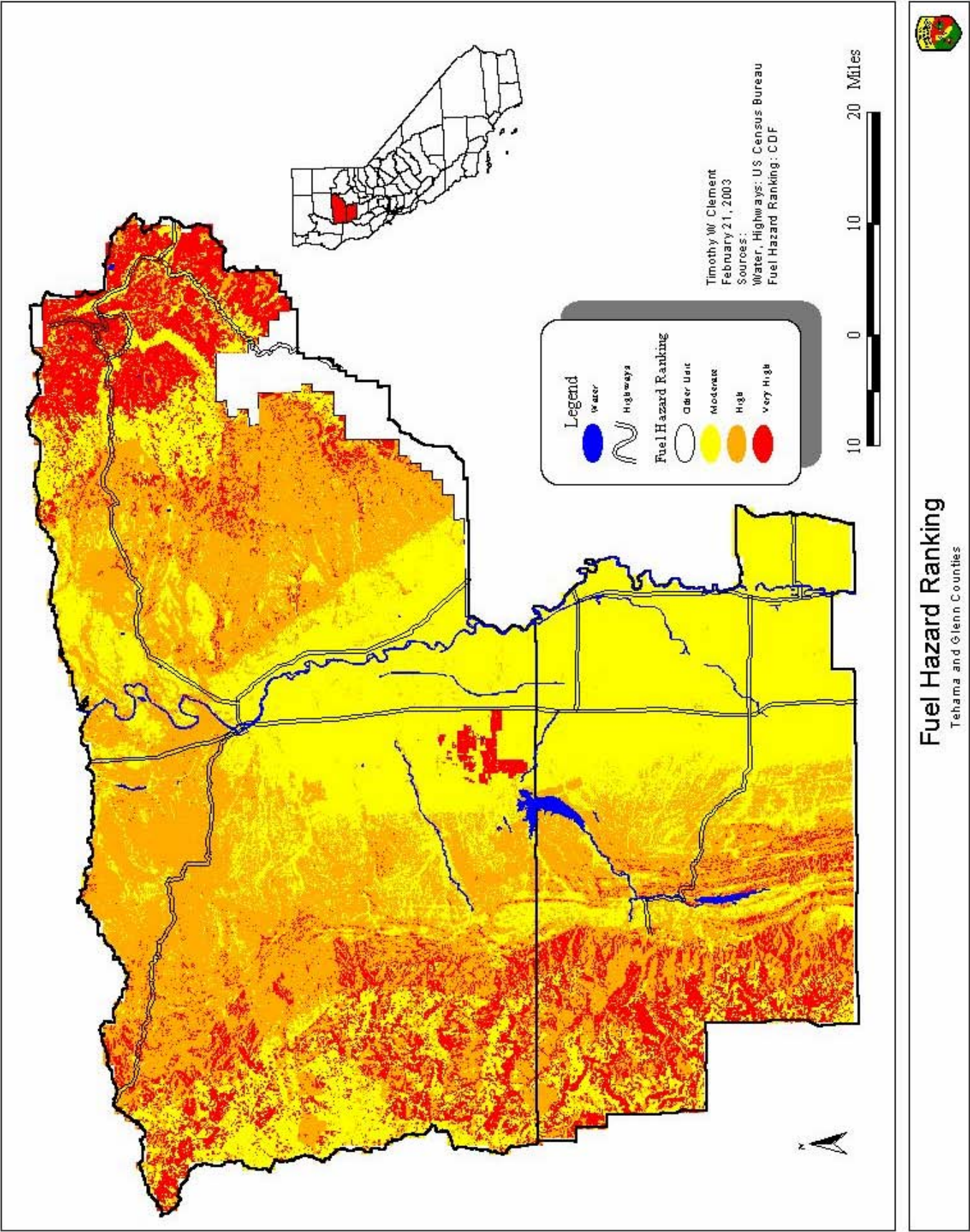
The assessment method calculates expected fire behavior for unique combinations of topography and fuels under a given weather condition. While the BEHAVE Fire Behavior Prediction System (Andrews 1986) provides estimates of fire behavior under severe fire weather conditions for each of the FPBS fuel models located on six slope classes. Each fuel model combined with each slope class receives a surface hazard rank

The potential fire behavior drives the hazard ranking. A rank is attributed to each Q81st (450 acre parcel) within the Tehama-Glenn Unit's state responsibility area (SRA). The ranking method portrays hazard ratings as moderate, high or very high. Stakeholders within the Tehama-Glenn Unit having an interest in ecosystem management, fuels management, and pre-fire management can use the map displaying the fuel hazard ranks as another tool to determine pre-fire management prescriptions.

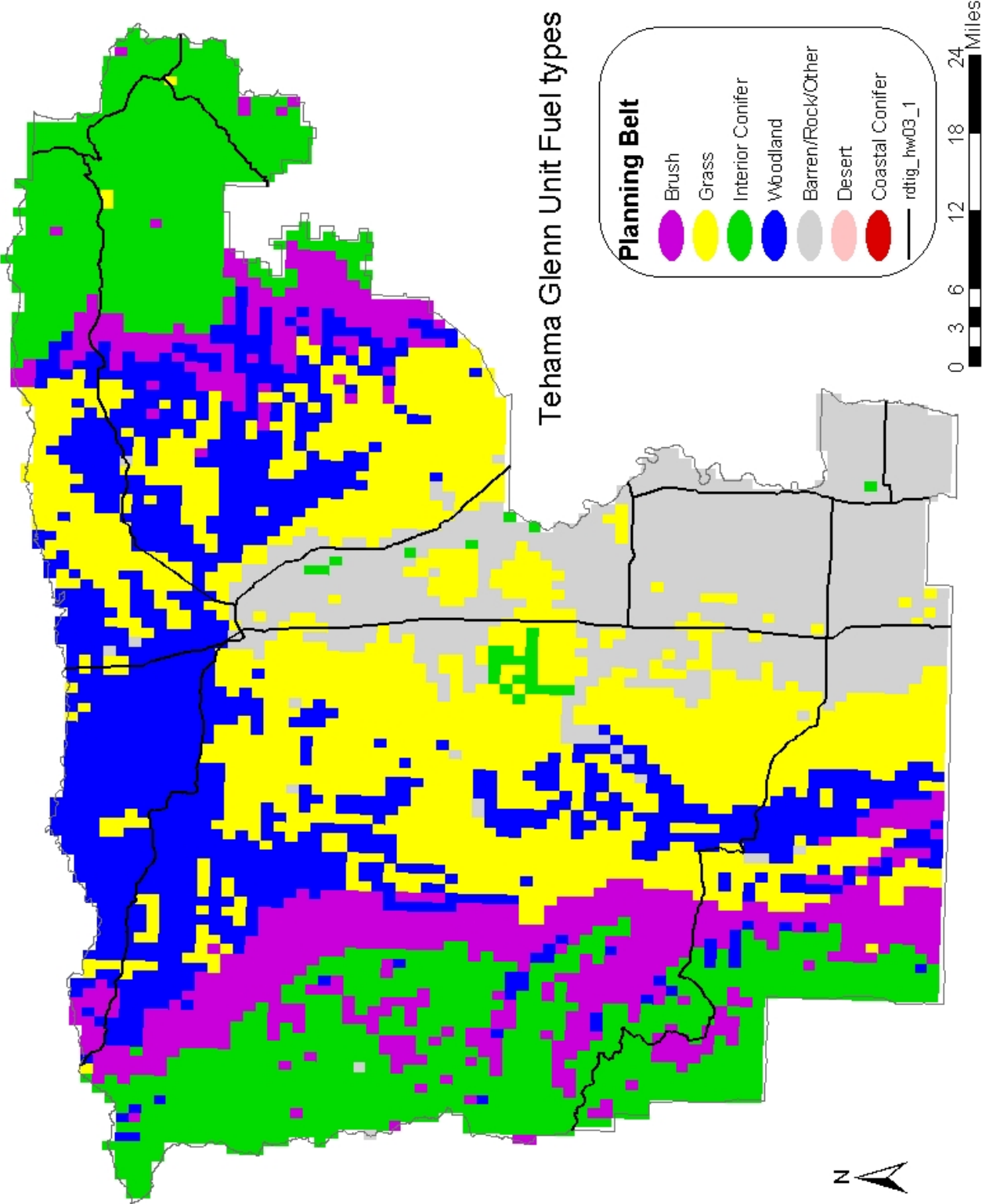
Knowledge of fire behavior in a given fuel type is paramount in developing a community defense plan against wildfire. Fires in grass burn rapidly, but can be stopped by a roadway or plowed firebreaks. Fires in brush often burn with an intensity that prevents fire crews from safely applying water to the flame front. Timber fires can ignite new fires (called spot fires) miles ahead of the main blaze, hampering control efforts. Only wide scale pre-fire management programs can reduce the potential of a wildfire catastrophe.

Another issue related to fuels that are not in the FPBS is housing density. As can be seen on the population density map (page 17) for Tehama and Glenn Counties, the introduction of humans has added fuel, in the form of structures, increasing the total fuel loading.

Tehama-Glenn Unit
Fire Management Plan
2004



Tehama-Glenn Unit
Fire Management Plan
2004



C. Frequency of Severe Fire Weather

Description of Severe Weather Analysis



Fire behavior is dramatically influenced by weather conditions. Large, costly fires are frequently, though not always, associated with severe fire weather. Severe fire weather is typified by high temperatures, low humidity and strong surface winds. The Fire Plan's weather assessment considers different climates of California, from fog shrouded coastal plains to hot, dry interior valleys and deserts to cooler windy mountains. Each of these local climates experiences a different frequency of weather

events that lead to severe fire behavior (severe fire weather). The Fire Plan's weather assessment uses a Fire Weather Index (FWI) developed by USDA Forest Service researchers at the Riverside Fire Lab. This index combines air temperature, relative humidity, and wind speed into a single value index. This index can be calculated from hourly weather readings such as those collected in the California Remote Automatic Weather Station (RAWS) data collection system. The FWI does not include fuel moistures or fuel models. The FWI includes topography only to the extent that the RAWS station weather readings are influenced by local topography.

Severe Weather Analysis Parameters

FWI CUTOFF	START LOW RANK	START MED RANK	START HIGH RANK
29.725	0%	5%	20%

STATION	OWNER	LATITUDE	LONGITUDE	ELEVATION	WXSCORE %	WXRANK
Lassen Lodge LAS	CDF	40.34	121.71	4000	.78	L
Manzanita Lake MNZ	USFS	40.54	121.58	5750	3.01	L
Summit HTN	NPS	40.50	121.42	6922	1.07	L
Cohasset CST	CDF	39.87	121.76	1670	1.49	L
Pattymocus PMC	USFS	40.28	122.87	3500	1.70	L
Chester CHS	USFS	40.28	121.23	4525	3.35	L
Alder Springs ADS	USFS	39.65	122.72	4475	.96	L
Stonyford STY	USFS	Null	Null	Null	Null	Null
Yolo Bolly YBL	USFS	Null	Null	Null	Null	Null

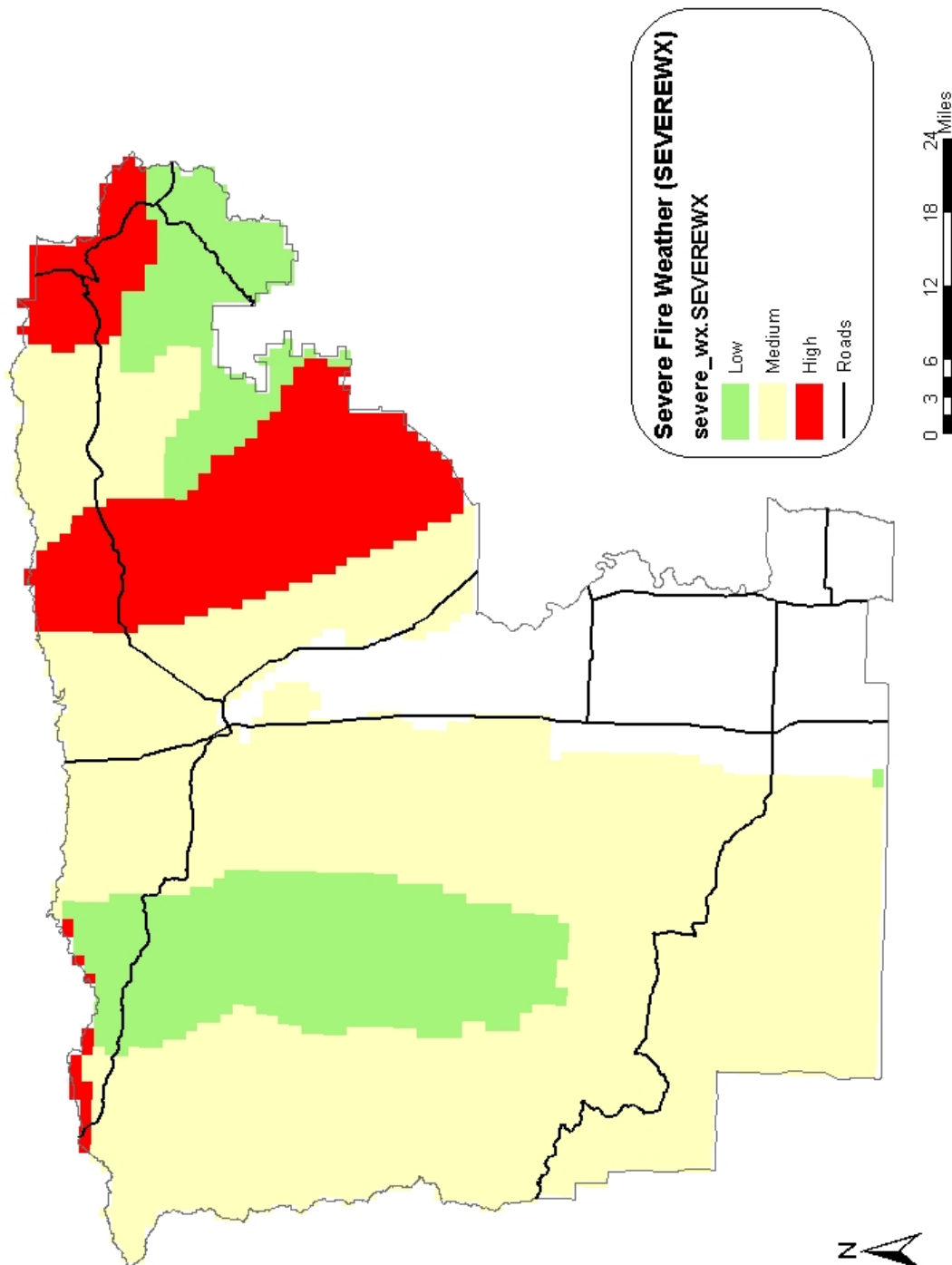
SevereWx and WxSCORE

[SevereWx]/[WxInSeas] The weather score is a percentage of the number of days of severe weather during the designated fire season. Non-fire season data is not considered as the fuels are not in a state in which they readily burn, regardless of the severity of weather. Naturally, there are rare exceptions to this; however, it is not feasible to factor in all possible contingencies. Moreover, including this data would only serve to weaken the representative impact that severe weather plays in fire behavior.

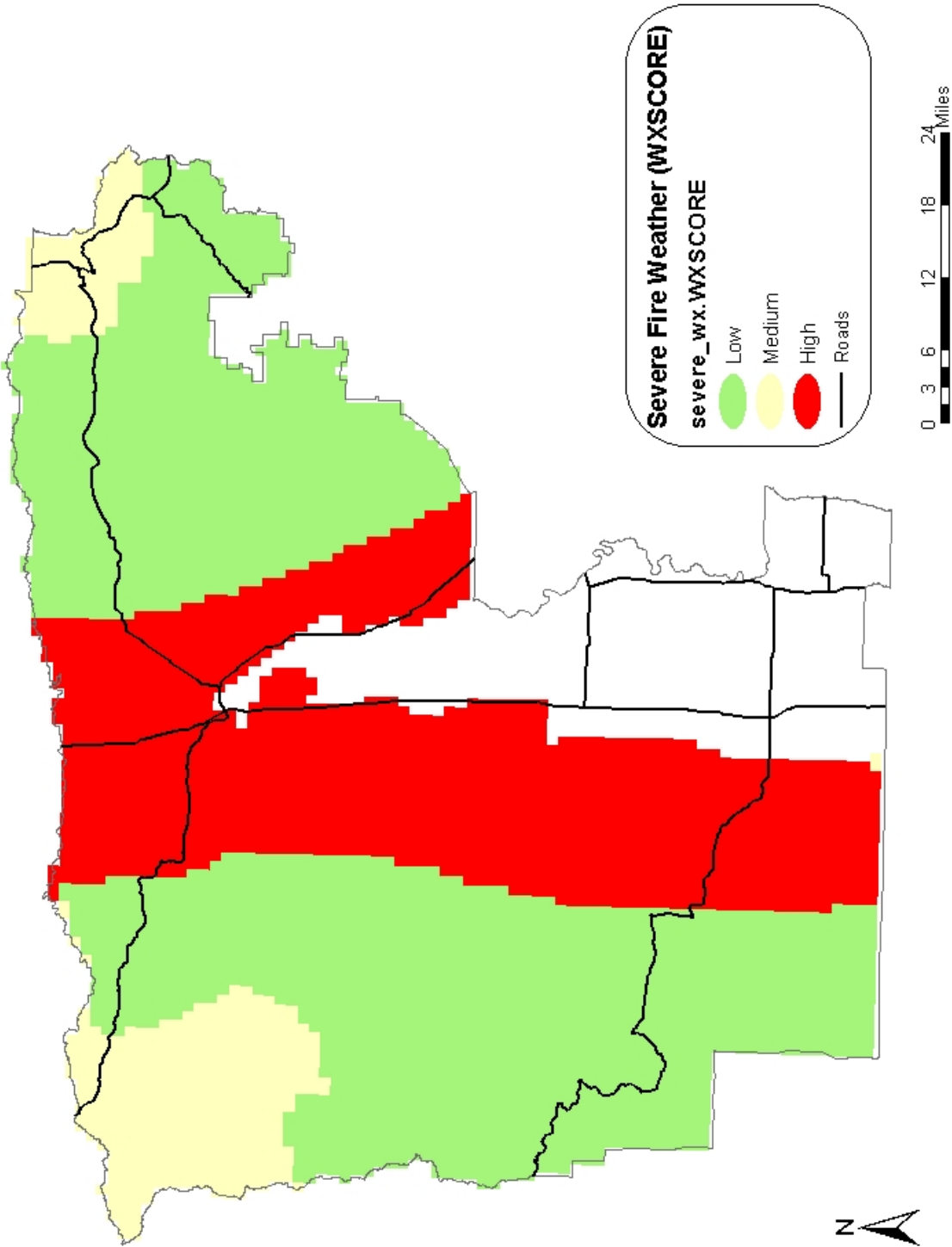
The WxSCORE intensity rating is lumped into three categories, low, medium and high, to create a severe fire weather frequency ranking (**WxRANK**).

Tehama-Glenn Unit
Fire Management Plan
2004

The Weather rankings are still in the validation stage and not available at this time.



Tehama-Glenn Unit
Fire Management Plan
2004



PRIORITY AREAS

The California Department of Forestry and Fire Protection (CDF) has established a statewide effort to promote fire protection planning as outlined in the California Fire Plan. CDF recognizes that fires often threaten multiple jurisdictions and pose a threat to all citizens of California. Thus, the Plan considers the interrelationships among the myriad of fire protection providers throughout the state. The California Fire Plan also acknowledges that stakeholders have a diversity of interests that are reflected in various values, their *assets at risk*. There is a common interest of stakeholders, both public and private, that fire management planning takes place in an organized manner and provides a format for documenting fire protection practices that affect Assets at Risk. In Tehama County, battalion boundaries serve administrative needs for wildfire response and for implementation of fire management strategies. Because the battalions cover large, diverse geographic areas, the Tehama-Glenn Unit has been divided into zones, which delineate areas with common factors affecting fire protection, fire risk and fire management. These factors include:

- Fuels
- Topography
- Access and Water Supply
- Assets at Risk
- Fire History

A. General Description of Zones

Twelve zones were established for fire management planning purposes. In addition to ten State Responsibility Areas (SRAs), there are two Federal Responsibility components (FRA-East and FRA-West) and one Local Responsibility Area (LRA). The ten SRA's (Zones 1-10) are described in the following pages along with an overview of the factors affecting fire protection. A matrix of fire protection practices was applied to each zone to determine the proposed actions that should be implemented to address the identified problems for each zone. These practices are reflected in the Action Plan. Each zone has a number of unique objectives that are specific to the landscapes and land uses found there.

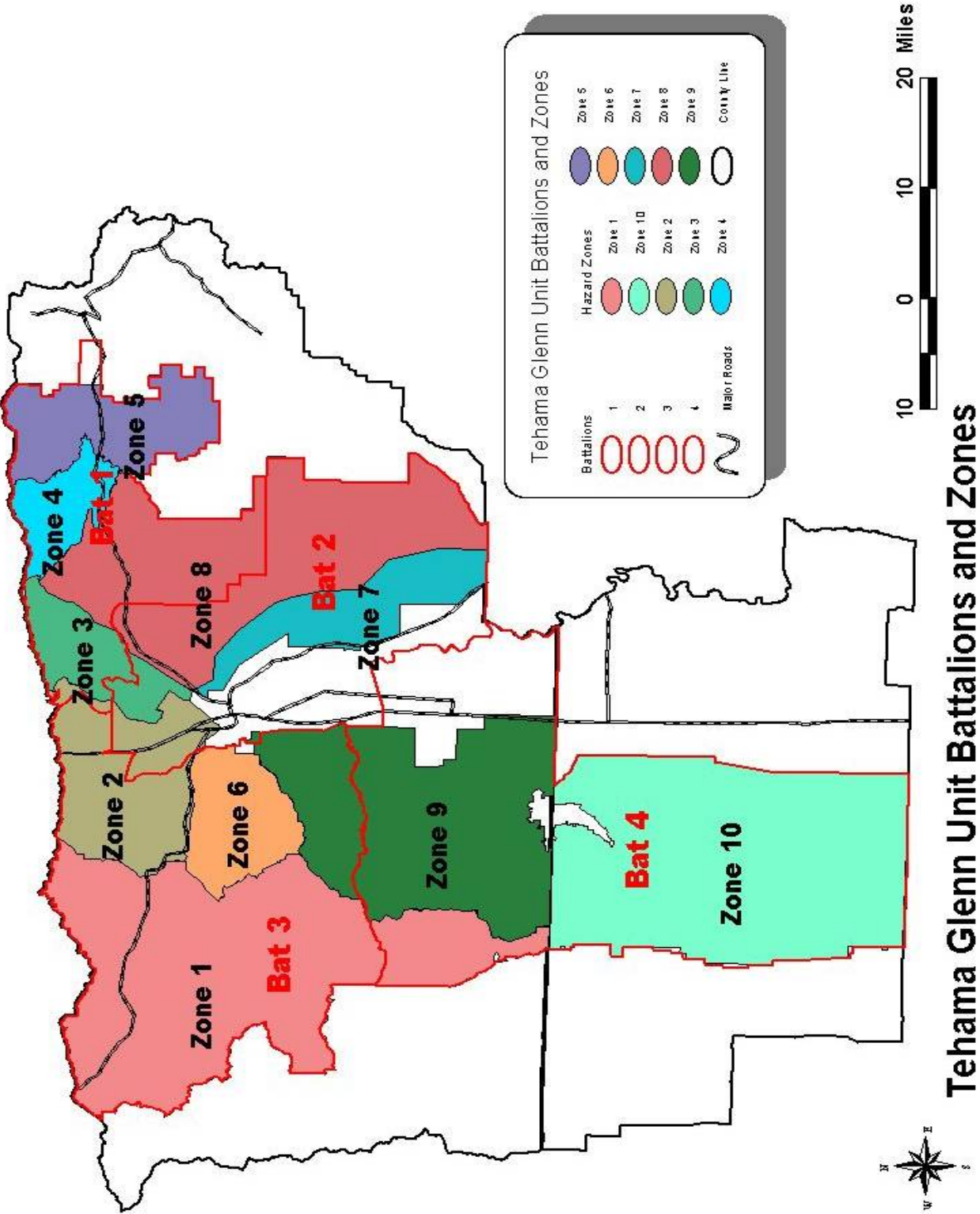
In addition, Zones 1-10 share a number of common objectives that are fundamental to fire prevention and fire management throughout both Tehama and Glenn County, which include:

- Implement Vegetation Management Practices (VMP) to reduce and modify fuel loading
- Determine special treatment areas within the Zone
- Work with county public works to reduce or modify roadside fuel hazards
- Enforce annual burn bans
- Continue fire prevention programs at area schools
- Implement public fire prevention programs in areas without significant public participation and add additional prevention programs in those areas with a rudimentary level of public participation
- Increase Law Enforcement focus on equipment violations and equipment use

Tehama-Glenn Unit
Fire Management Plan
2004

- Increase Law Enforcement focus on debris burning, playing with fire and arson
- Implement an agricultural and construction equipment inspection program

- Conduct Red Flag patrols and public contacts
- Implement power line inspection



Tehama-Glenn Unit
Fire Management Plan
2003

Zone	Battalion(s)	Fuels	Topography	Access	Water Supply	Level of Service	Primary Assets
1 Paskenta, Red Bank, R-Ranch	3 4	Oak-woodland; chaparral brush	rolling to steep hills	Poor: mostly rugged, difficult	Poor: steep drainages, seasonal ponds and streams	3 fire stations, 1 conservation camp	communities, ranches, rangeland and ag land
2 Bowman, Dibble Creek, Lake CA, Wilcox	2 3	Grass rangeland, oak woodland, brush	rolling to steep hills	Moderate to Poor: some rugged terrain	Moderate: water sources range from adequate to poor	3 fire stations	homes, ranch structures, rangeland, watersheds
3 Bend, Dales, Hog Lake	1 2	Grass, grass-dominated oak woodland	flat terrain to rolling hills	Good	Moderate to poor: few dependable year-round sources	No stations (served by CDF in Red Bluff and Manton)	rangeland, homes, ranches, watersheds
4 Manton, Sky Ranch	2	Oak-woodland; chaparral brush; conifer	Broad ridges, steep canyons	Poor	Poor: few ponds, minimal access to streams	3 fire stations, 1 conservation camp	Communities, ranches, rangeland, watersheds, forest
5 Mill Creek, Mineral	2	Mixed conifer woodland	Broad ridges, steep canyons	Moderate: high- ways, county & logging roads	Poor: few ponds, minimal access to streams	4 fire stations	Communities, timber, watersheds
6 Live Oak, West Red Bluff	3	Grass rangeland, oak woodland, brush	Rolling hills	Good (moderate in western portion of zone)	Variable Poor to Good	2 fire stations	Rural homes, ranches, rangeland
7 Vina Plains	2 4	Grass, grass-dominated oak woodland	Flat terrain to rolling hills	Poor	Variable	No stations	Houses, ranches, rangeland, watersheds, fisheries
8 Ishi, Paynes Creek	1 2	Oak-woodland; chaparral brush	Broad ridges, steep canyons	Poor	Poor	No stations	Rangeland, rural homes, watersheds, fisheries
9 Flourney, Paskenta, Rancho Tehama	3 4	Grass rangeland, oak woodland, brush	Rolling hills	Moderate	Variable Poor to Moderate	2 fire stations	Communities, rural homes, ranches, rangeland
10 Glenn County (SRA)	4	Grass rangeland, oak woodland, brush	Rolling to steep hills	Moderate to Poor: some rugged terrain	Variable Poor to Moderate	1 station	Ranches, rural homes, rangeland and ag land, watersheds

Tehama-Glenn Unit
Fire Management Plan
2003

ZONE 1 – Paskenta, Red Bank, R-Ranch

PRIORITY RATING: Moderate

Zone 1 encompasses much of western Tehama County and includes the communities of Paskenta and R-Ranch. Besides communities, fires in the Zone threaten timber stands, rural ranches and agricultural land. Grassy fuels at lower elevations present the primary fire threat in Zone 1. These fuels are often located where the threat of human caused ignition is greatest as they ignite easily, and carry fire rapidly. The predominant vegetation types affecting fire danger include Blue and Live oak woodland and mixed chaparral brush.

The leading causes of fires in Zone 1 from 1993 to 2003 were by lightning and equipment use. Zone 1 is particularly affected by severe weather because high winds carry fire quickly through the predominantly grass and brush covered land. Much of the area is difficult to access by fire equipment.

Stakeholders

Sunflower Coordinated Resource Management Plan
Coordinator: Bill Borrows
Email: sunflowercrmp@msn.com

12250 Colyear Springs Road
Red Bluff, CA 96080
(530) 529-1535
Fax (530) 529-1515

Reeds – Red Bank Landowners Group
Tehama County Resources Conservation District
Vicky Dawley
Email: vicky.dawley@ca.nacdnet.org

2 Sutter Street, Suite D
Red Bluff, CA 96080
(530) 527-3013 ext. 3
FAX (530) 527-7451

Cottonwood Creek Watershed Group
Coordinator: Veva Swearingen
Email: ccwg@shasta.com
<http://www.cottonwoodcofc.org/ccwg/ccwg.htm>

P.O. Box 1198
3233 Brush Street
Cottonwood, CA 96022
(530) 347-6637
FAX (530) 226-9622

Cottonwood Creek Watershed Fire Safe Council
Coordinator: Veva Swearingen
Email: ccwg@shasta.com

P.O. Box 1198
3233 Brush Street
Cottonwood, CA 96022
(530) 347-6637
FAX (530) 347-6346

Objectives

- Continue fuel break construction and maintenance in Pellows Area
- Implement a fire prevention program for hardwood harvesting operations
- Review effectiveness of initial attack capabilities at Baker Station
- Determine fire detection capabilities (noting loss of Pattymocus Lookout)

Tehama-Glenn Unit
Fire Management Plan
2003

Projects

Sunflower CRMP (SCRMP)

The Sunflower CRMP (SCRMP) was created in 1980 as a state supported, landowner driven organization designed to enhance the environment of the Sunflower Flat area of western Tehama County. The group's area of concern encompasses 72,000 acres of which 57,600 acres are privately held, while the remaining 14,400 acres are managed by federal agencies.

The group's primary mission is to enhance 40,000 acres of chaparral belt land and associated areas in order to make the area more productive and safe for the social, financial, and environmental needs of the temporary stewards of the land. To advance this mission the CRMP has a number of primary objectives which focus on fuels reduction, water development, along with the wildlife habitat improvement and species diversity.

The Holistic Goal is:

Quality of Life:

To achieve something extraordinary in our area. To create a landscape that encourages people to enjoy our area and be happy and healthy. To work harmoniously with government agencies and neighboring businesses to achieve our common goal and respect each others individual goal and needs.

Forms of Production:

A reputation for excellence and innovation. Maintenance of our efforts with proceeds from our resource base and knowledge and expertise. A landscape that is sustainably healthy and fire safe (to protect crops, range, timber) so that all landowners may enjoy our landscape. Profit from diverse enterprises that do not conflict with our quality of life.

Future Resource Base:

People: To be the ideal chaparral management example. Able to lead others forward in their region.

Land: Have as much life in the top two inches of the soil as possible which will limit the chaparral belt to sites that will not grow anything else, produce enough grassland to sustain large bands of domestic animals and wildlife to maintain the fire safe landscape. Also, have water sources strategically placed so that all types of animals will be able to live in our area year-round. Be a safe harbor for as many T&E as possible, recognizing that diversity is stability. Have as many productive green leaves as possible for as long as possible.

Community: Have a community that centers on the shared experience of living and making a living in the CRMP area. Able to call on each other to contribute to the good of all, current and future generations. Spread out to include others that wish to learn from us that we may support each other.

The primary objectives are:

*Reduce fuel loads and fire hazards.

*Develop and improve water sources to be used for fire control, wildlife, and livestock.

Tehama-Glenn Unit
Fire Management Plan
2004

- *Extend the base flow of perennial streams within the CRMP boundary.
- *Create and improve wildlife habitat through "low serial stage" ecosystem that is very bio-diverse.
- *Establish and maintain fire trails and fuel breaks.
- *Develop habitat for threatened and endangered species under the protection of Safe Harbor agreements with the USF&WS.
- *Develop a program of environmental monitoring in order to evaluate and quantify the success of environmental projects.
- *Provide educational opportunities and a demonstration area for others who want to be good stewards of the land.

Government agencies and educational institutions are encouraged to participate in a supportive role for the objectives developed by the CRMP members. At the present time the United States Forest Service (USFS), Bureau of Land Management (BLM), United States Fish and Wildlife Service (USF&WS), Natural Resources Conservation Service (NRCS), California Department of Forestry and Fire Protection (CDF), California Department of Fish and Game (CDF&G), California Department of Water Resources (DWR), Tehama County Resource Conservation District (TCRCD), Tehama County Resource Advisory Committee (RAC), Humboldt State, and Chico State Universities, private consultants, landowners, and Shasta College staff and students are providing technical and financial support. To obtain the CRMP group's goal and objectives, various environmental improvement projects have been planned, are in process, or have been completed.

Sunflower Completed Fuel Breaks and Burns:

- *The completed Sunflower/Lanyon Trail, Elkhorn Ridge, Valentine Ridge, and Colyear Springs Fuel Break provides a 30-mile long, 300'-500' wide defensible fuel profile zone (DFPZ) within the chaparral fuels throughout the Sunflower CRMP area. As of 2003, 30-miles of fire trail have been created and 2,000 acres of brush on either side of the trail route have been crushed using a ball and chain and mastication.
- *500 acres of broadcast burns were completed in the spring of 2004 by CDF and USFS.

Sunflower Water Development:

During the 2002-03 period, two springs were developed and one 7 ac/ft reservoir was completed to provide for fire protection and wildlife habitat water sources. Over the next several years, the SCRMP, with assistance from the USFS, BLM, and NRCS, will install three ponds and improve habitat and water yield around 8-10 springs. As a result, abundant supplies of water will be made available for game and non-game wildlife, fire suppression, and pre-suppression activities.

Monitoring Activities:

Several types of monitoring are in place to develop base-line data, and to determine the impact of brush treatment on non-game and game species, water quality, and general environmental enhancement, including:

- 1) Pre- and post-photo monitoring at five locations.

- 2) Macro-invertebrate monitoring of the major tributary in the area (Red Bank Creek).
- 3) Maximum flow and base flow of Red Bank Creek.
- 4) Sixteen sites are in process of being established to monitor neotrophic birds and other avian species using tape recorders following the California Department of Fish and Game protocol.
- 5) A long-term 20-mile transect is being established to determine Blacktail Deer response to impacted areas. The California Department of Fish and Games' Deer Monitoring protocol is being followed.
- 6) Refer to the Red-Legged Frog and Yellow-Legged Frog Inventory and Research below.

Red-Legged Frog and Yellow-Legged Frog Inventory and Research:

Four listed species of herpetofauna historically or currently occur in or around the confines of the Sunflower CRMP: (1) California red-legged frog (*Rana aurora draytonii*), (2) foothill yellow-legged frog (*Rana boylei*), (3) western pond turtle (*Clemmys marmorata marmorata*), and (4) western spadefoot toad (*Spea hamondii*). Until recently, no systematic surveys have been conducted to document the presence and distribution of these species on the Sunflower CRMP. Therefore, we are currently supporting inventory surveys and two research projects, which will provide useful baseline data necessary for future monitoring.

The California red-legged frog (RAAU) is a federally threatened species that historically occurred within the Sunflower CRMP (California Natural Diversity Database). Since November 2003 systematic USFWS protocol surveys have been conducted to determine if RAAU currently occur. Approximately twenty stream miles and eleven reservoirs have been surveyed and as of yet, no RAAU have been observed.

The foothill yellow-legged frog (RABO) is a California species of special concern that currently occurs on the Sunflower CRMP. Presently, we are working with HSU graduate students in support of two research projects investigating the natural history and ecology of this species. One project is a radio-telemetry study aimed at describing the habitat use and movement patterns of these frogs. The other study is looking at the diet and resource partitioning of RABO in an attempt to identify critical food resources. This research will provide useful information necessary for developing an effective and sustainable management plan.

Sunflower CRMP Planned Activities 2004-2005:

*Twenty-two miles of inter-connected fuel breaks (800 acres) will be established with ball and chain during the next two years.

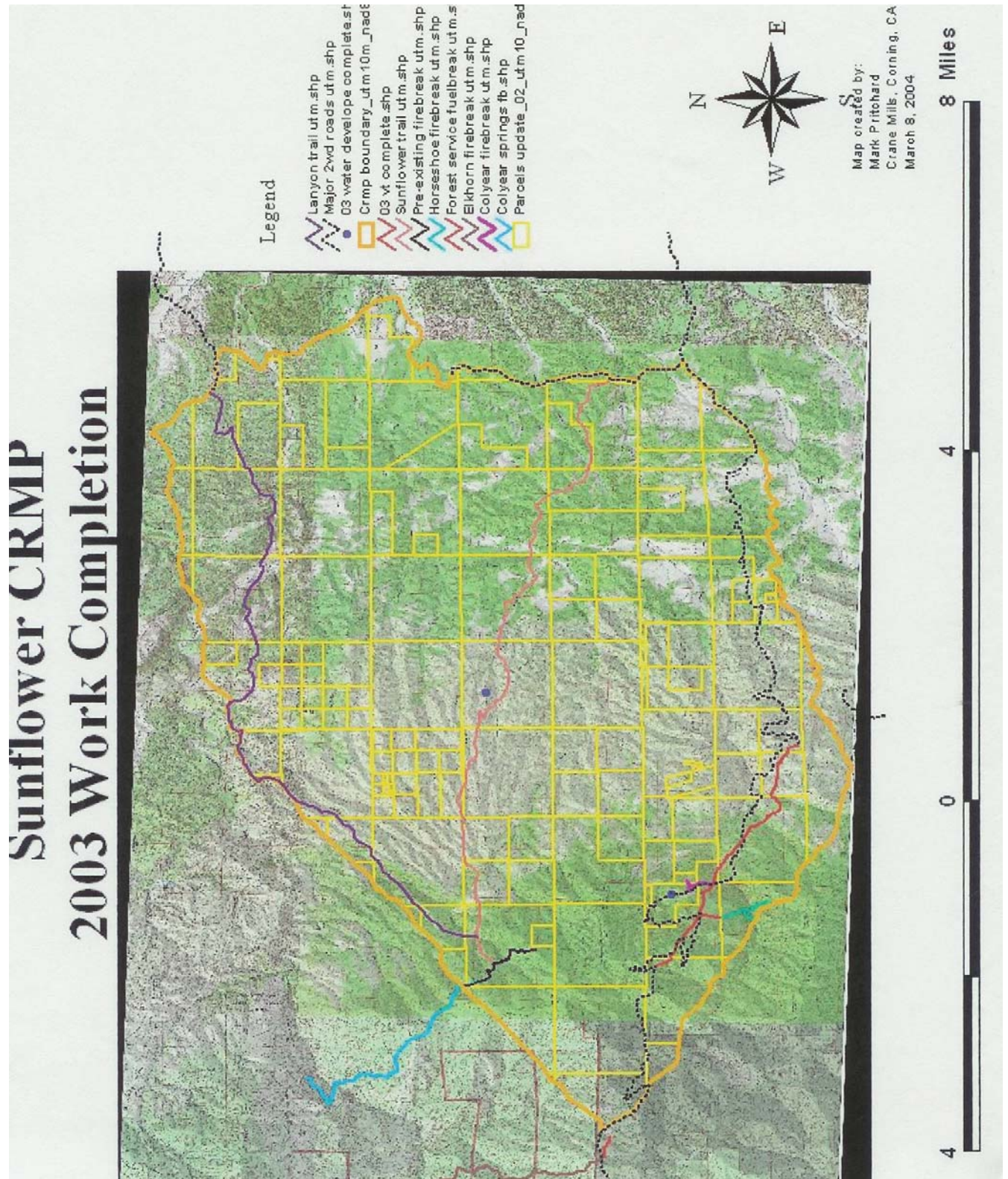
*Polygon broadcast burns of 2,000 acres are planned between, and around the present Defensible Fire Zones.

*2005: Bring in 1,000 hd. of meat goats and hair sheep with full-time herders ~ to impact fire-treated and mechanically treated areas.

Sustainable Maintenance Plan:

Tehama-Glenn Unit
Fire Management Plan
2004

Presently, the Sunflower CRMP is carrying out a 5-year Goat Grazing Trial under the supervision of the University of California and Chico State University. The SCRMP is anticipating bringing 1,000 hd. Units of meat goats and hair sheep to keep the treated brush areas in a low serial stage. The plan is to develop a long-term sustainable low serial stage system to keep the SCRMP area fire safe and productive far into the future.



Hammer Loop Fuel Management Zone

The Cottonwood Creek Watershed Group has placed a request for a grant to:

- Reduction of hazardous fuel
- Protection of Communities at risk, National Forest lands and Wilderness Area
- Enhance wildlife and livestock habitat
- Develop fuel management zones near USFS lands, using shaded fuel breaks and prescribed burning

Description of Project:

Clearing roadside fuel from the lower Hammer loop road to Petty John Road; then progressing west along Petty John Road to Forest Service Road #35. This is approximately 7 miles in length. Clearing will occur up to 150' either side of the road centerline, depending upon the terrain and the type of vegetation. Hand cutting and burning is the primary method that will be used. Some mechanical clearing could be utilized if the terrain allows. The project will take several years to accomplish. This fuel management zone will provide benefit to the National Forest lands, the wilderness area of Voila Bolla Middle Eel, El Rancho Rio Frio development as well as the ranches and grazing lands in the area. The overall health of the forest will be improved as well as the habitat for wildlife.

This project will tie into the Sunflower CRMP project (occurring on the south side of the water shed boundaries), which will increase the protection they are developing. This fuel break would benefit to a proposed fuel reduction plan along Nuisance Ridge from South Fork Cottonwood Creek to Tom Head Mountain, which is currently being considered by the Forest Service.

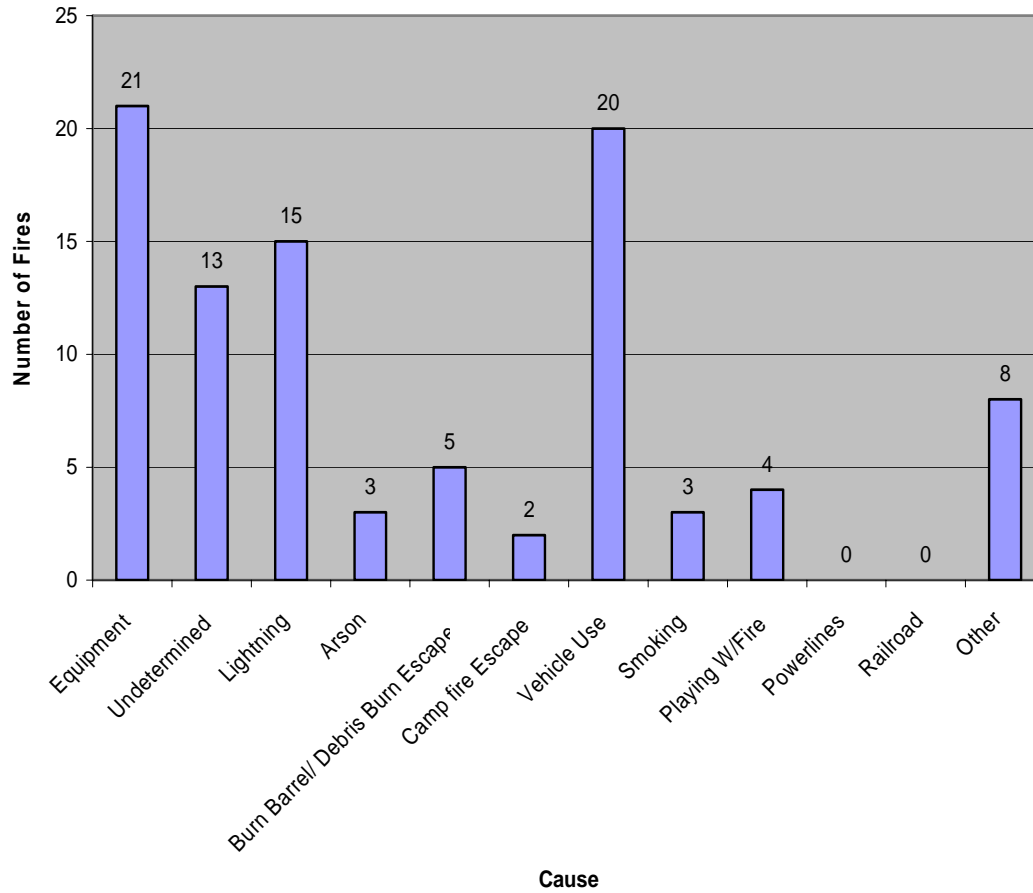
This grant application will provide both fuel reduction, assistance in eliminating catastrophic wild land fires, also improved health in the watershed for wildlife and the forests in the 605,000 acres of this watershed.

The designation of this proposed fuel break was developed with assistance from the S-T Forest Service, CDF and the Sunflower CRMP. Other agencies will also be contacted for support.

Work along creeks and streams will be given appropriate consideration, and the improved acreage for both rangeland and wildlife habitat will depend on management considerations.

Tehama-Glenn Unit
Fire Management Plan
2004

ZONE 1 (R-RANCH/PASKENTA)
FIRE CAUSES 1993-2003



Tehama-Glenn Unit
Fire Management Plan
2003

ZONE 2 – Bowman, Dibble Creek, Lake California, and Wilcox

PRIORITY RATING: High

Zone 2 encompasses the northern valley floor of Tehama County and includes the Lake California development and the rural communities of Bowman, Wilcox and Dibble Creek. Most undeveloped land is used for livestock grazing. Three vegetation types are present in the Zone including grassland, chaparral, and oak woodland. Grasses are the major fire risk.

Expanding human population in this zone is accompanied by an increasing threat of fires along the wildland urban interface. Activity along roads (e.g. equipment use, smoking, vehicle exhaust, etc.) has been the leading cause of vegetation fires from 1993 to 2003. Fires in grasslands may spread quickly into inaccessible areas.

Stakeholders

Cottonwood Creek Watershed Group
Coordinator: Veva Swearingen
Email: ccwg@shasta.com
<http://www.cottonwoodcofc.org/ccwg/ccwg.htm>

P.O. Box 1198
3233 Brush Street
Cottonwood, CA 96022
(530) 347-6637
FAX (530) 226-9622

Cottonwood Creek Watershed Fire Safe Council
Coordinator: Veva Swearingen
Email: ccwg@shasta.com

P.O. Box 1198
3233 Brush Street
Cottonwood, CA 96022
(530) 347-6637
FAX (530) 347-6346

Objectives

- Identify locations for fuel breaks
- Work with Cal Trans and Public Works on roadside fuel modification
- Develop fire protection water supply infrastructure (e.g. Quail Ridge Estates)
- Determine initial attack capabilities at the Bowman Station

Projects

Lake California Fuels Reduction

Lake California is an expanding housing development located on 6,500 acres in northern Tehama County along the Sacramento River. The development contains 535 homes and 30 duplexes, which, together, house 1,500 residents. Beginning in 1993, the Lake California Homeowner Association has been contracting with the Tehama-Glenn Unit California Department of Forestry and Fire Protection to do fuel reduction projects. The current project area is 1,900 acres and is expanding. Projects include inmate crews cutting, stacking, chipping and burning the fuel removed.

Lake California Multi-Hazard Emergency Evacuation Plan

The plan consists of a pre-fire, fire safety, and evacuation component. The plan document provides residence of the Lake California area with measures to take in order to prepare for wildland fires. The plan describes how to make rural homes fire safe in terms of design, construction methods and materials, as well as landscaping techniques. In addition, information is provided on what to do if a wildfire occurs. Finally, the streets within the Lake California development have been divided into 5 zones based upon topography and location to nearby shelter areas. Each zone is shown on a street map of the development and directions are provided to the appropriate shelter area. Instructions are given on how to safely evacuate to shelter areas. The California Department of Forestry and Fire Protection expects to use the Lake California Multi-Hazard Emergency Evacuation Plan as a model to be used in other rural residential developments throughout Tehama and Glenn Counties.

Cottonwood Creek Fire Management Plan

The Cottonwood Creek watershed encompasses approximately 603,800 acres and includes the communities of Beegum, Platina, Igo, and Bowman, which are classified in the federal register as being at risk from catastrophic fire. Ownership within the watershed is a mix of public (U.S. Forest Service and Bureau of Land Management) lands and private property including timberlands, small rural subdivisions, and agricultural lands. In 2001, the group received a community assistance grant for the formation of The Cottonwood Creek Watershed Fire Safe Council within the watershed. At the present time, the watershed group has applied for a \$31,000 grant in order to provide continued funding for the council. Among the goals of the council's continued organization are ongoing monthly meetings, which serve as means of outreach and fire education. These efforts will take the form of a fire education speaker's series as well as various training programs. The Cottonwood Creek Fire Safe Council also plans to use these funds to develop a fire management plan; watershed evacuation plan; education plan and operations plan. The council hopes to complete a road inventory, improved road and community signage and continue to develop an array of fuels reduction projects, which would be funded by a separate series of grants, provided under the Community Based Wildfire Prevention Grants Program.

Tedoc Mountain CRMP Phase I

In order to promote fire hazard reduction and resource protection, a group of landowners in the Tedoc Mountain area of western Tehama County have submitted a grant application for \$28,000 under the Secure Rural Schools and Community Self Determination Act of 2000. The funds will be used to develop the Tedoc Mountain CRMP. The area of concern for the organization is roughly 30,000 acres just north of the Sunflower CRMP. The proposed CRMP has five primary goals. These include:

- Reduce of Hazardous Fuels
- Increase water flow in streams
- Enhance wildlife, fisheries, and livestock habitat

- Develop water sources for fire control
- Develop fuels breaks near USFS lands

To accomplish these goals, the Tedoc Mountain CRMP will identify strategic areas with which to clear hazardous fuels and construct fuels breaks. The group also proposes to develop new water sources and assess which current sources require protection. The goals of the CRMP will also be realized through research into the appropriate methods of fuels reduction as well as appropriate native seed stock to be used in promoting wildlife habitat forage. The group will maximize financial and capital resources by teaming with the neighboring Sunflower CRMP in a number of fuels reduction projects. Partnerships are also expected to be established with the United States Forest Service, the California Department of Forestry and Fire Protection, the California Department of Fish and Game, along with a number resource and wildlife oriented non-profit organizations. During Phase I of CRMP development, the Tedoc group has proposed to maintain 12 miles of ranch roads; reduce the fire hazard and improve productivity on 3000 acres of land; restore 20 miles of streams and related fish habitat; reestablish about 100 acres of native species habitat; reduce forest fuels on 3500 acres of timberlands and 600 acres of rangeland and restore 300 acres of wildlife habitat. Funding for the CRMP was initiated in June 2003 and project work is expected to be completed in December 2004.

Quail Ridge Fuel Break

The Cottonwood Creek Watershed Group has proposed the development of a shaded fuel break as a means to reduce wildland fuels, fire spread and human caused fire starts. It will also provide a safe area from which fire-fighting forces can conduct suppression activities and an escape route for residents of the Quail Ridge if catastrophic wildfires occur. The design of the fuel break calls for a 150' wide, 5 mile long break in area fuels which consists of manzanita thickets and scattered blue oaks. Approximately 500 tons of brush will be harvested using an excavator and crawler tractor. The brush will be ground into chips on site and transported to a biomass plant. The exact location of the fuel break will be determined by the California Department of Forestry and Fire Protection and will be strategically placed in order to provide protection to both Quail Ridge residents and those within the Bowman Road area. A grant application has been submitted to the United States Forest Service and funding is expected in the near future.

Quail Ridge Water Storage

In order to improve fire suppression in the Quail Ridge area, the Cottonwood Creek Watershed Group has requested funding for up to three 10,000 gallon water cisterns along Quail Ridge Road. The storage facilities will allow gravity feed of water to fire engines in the event of local wildfires. Sites for the cisterns include the intersection of Quail Ridge Road and Golden Arrow Road, Hooker Road and Quail Ridge Road, and the Basler/Benson Road intersection at Quail Ridge Road. The watershed group submitted a grant application to the United States Forest in early 2003.

Platina Fuel Break

The Cottonwood Creek Watershed Group has submitted a request for fuels reductions funds available through the Community-Based Wildfire Prevention Grants Program and the Economic Action Program Economic Recovery Program, which provides wildfire protection grants to landowners and communities located adjacent to national forest lands. The project entails chipping and mechanically processing roadside vegetation as well as hand thinning, piling and burning of woody debris along State Highway 36 just east of Platina. The 73-acre, 100 foot wide fuel break project will be conducted as a cooperative effort with the Shasta Trinity National Forest in order to reduce hazardous fuels within the wildland/urban interface of the Platina Area. The fuel break will be located such that it utilizes the fire control areas created by the Forest Service's Knob Peak Fuel Reduction and Habitat Enhancement project. Project work On CalTrans right-of-way 1 ½ miles in Tehama County and 5 ½ miles in Shasta County has started. Heavy brush and hazard trees are being removed from the right-of-way to the edge of right-of-way or 100' on both sides of Highway 36W. The grant funding extends until November 2004. Maintenance and completion beyond November has not been discussed with the Conservancy.

California Highway Patrol Cottonwood Scales Fuel Break

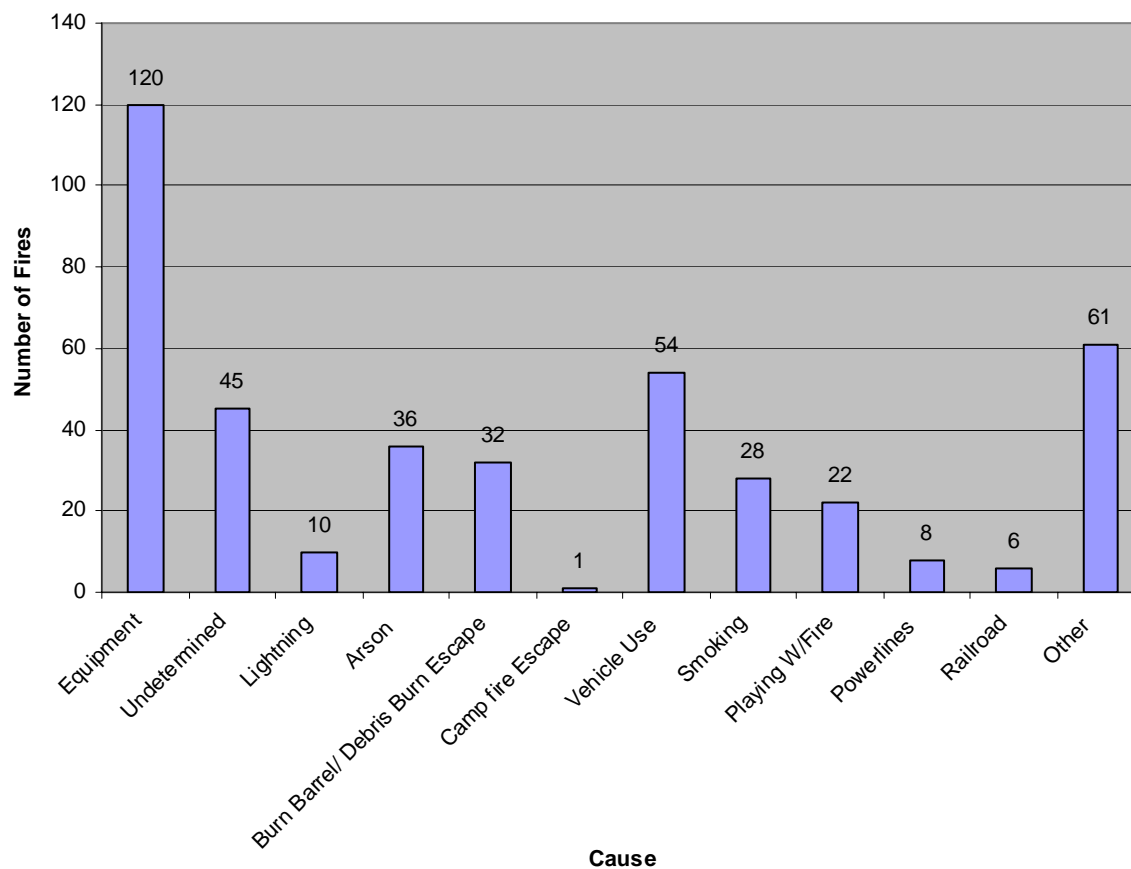
Handline constructed around the north bound CHP Scales prevents fires starting in the scale area from spreading to adjacent private properties and wildland. The project is approximately 1 mile in length. Costs are covered under an exchange of services. The project is done annually.

I-5 Fuel Break

CalTrans right-of-way along both sides of Interstate 5 north of Red Bluff. A 6' to 8' handline is cut in the grass annually to prevent the spread of fires starting on the I-5 right-of-way from spreading off the right-of-way and threatening homes near the freeway. The project is 6 ½ miles long on both sides of the freeway. It is sponsored by the Tehama Glenn Unit and is a joint project with Ishi and Salt Creek Camps. The project costs are carried by the Unit and the Camps.

Tehama-Glenn Unit
Fire Management Plan
2004

ZONE 2 (BOWMAN/LAKE CALIFORNIA/BEND)
FIRE CAUSES 1993-2003



ZONE 3 – Bend, Dales, Hog Lake

PRIORITY RATING: Low

Zone 3 is located in the northern portion of Tehama County. Communities within the Zone, Dales and Bend, are rural and sparsely populated. Most of the zone is grassland and grass-dominated oak woodland. Grasses are the major carrier of fire in this area. Rangeland grasses, homes and residents are the major assets at risk in Zone 3. Grassland fires accompanied by high winds are likely to spread rapidly and damage large areas. Another issue in the Zone is the lack of dependable year-round water sources. Most fires in Zone 3 have been caused by human activity including equipment use and vehicle exhaust.

Stakeholders

Battle Creek Watershed Conservancy
Sharon Paquin-Gilmore
Email: spaquin@shasta.com
<http://www.battle-creek.net/>

P.O. Box 560
Manton, CA 96059
(530) 474-3368

The Nature Conservancy
Peter Hujik
Email: phujik@tnc.org
<http://www.tnccalifornia.org>

11010 Foothill Road
Los Molinos, CA 96055
(530) 527-0420
FAX (530) 527-0384

Objectives

Protect urban developments in the area
Reduce fire starts along roadways from vehicle use

Projects

Bend Boundary

This Wildland/Urban interface project entails low intensity burning of grass and light brush ground fuels within 120 acres of Blue Oak Woodlands managed by the Bureau of Land Management in the Bend District of Tehama County. The project area is adjacent to a subdivision and other urban development and as a result, is of particular interest to the BLM as a priority project under the National Fire Plan. In addition to fire hazard reduction, the project is expected to yield pond and watershed improvement benefits. The project is expected to be initiated in 2004.

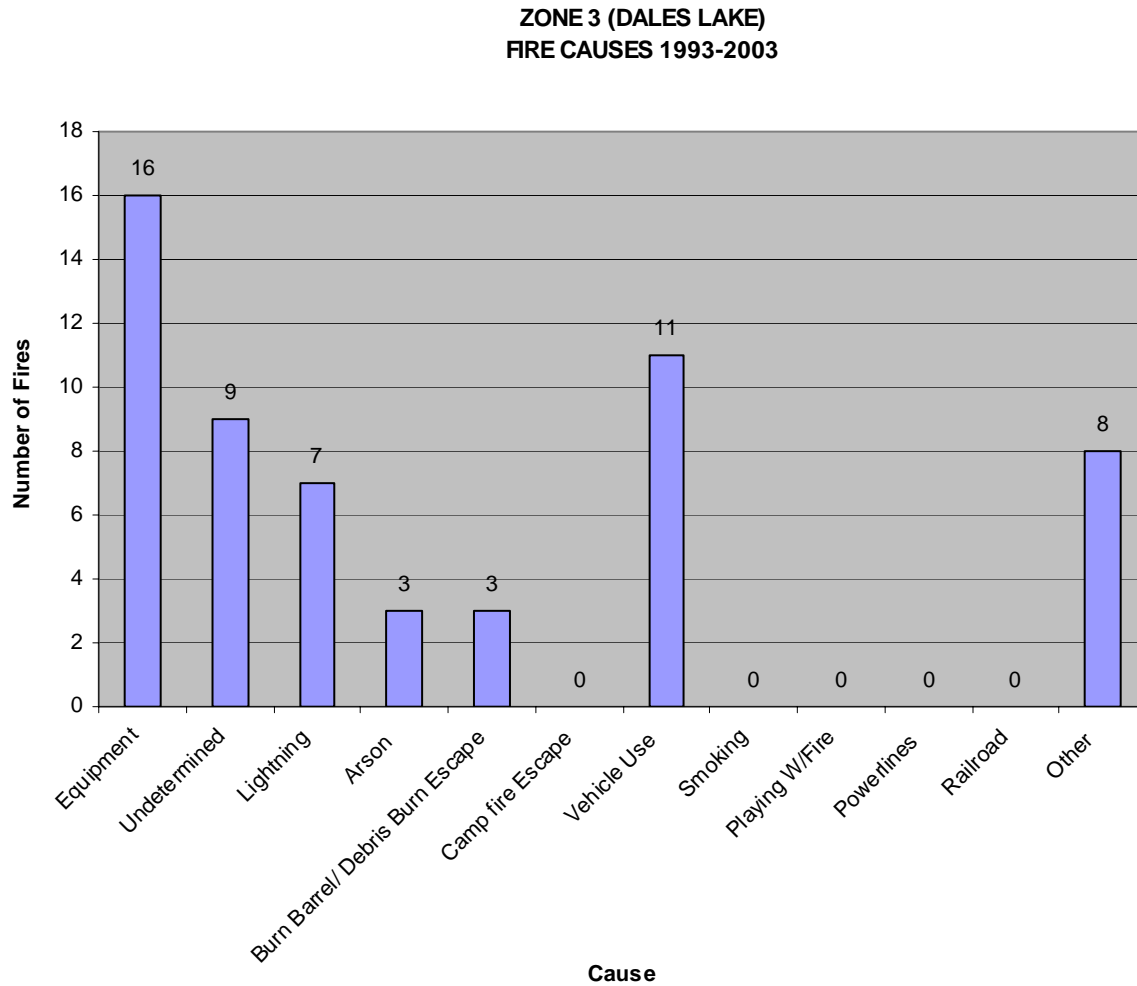
Lassen Foothills Range Management (Zones 3, 7 & 8)

This project is described under "Multiple Zone Projects."

Tehama-Glenn Unit
Fire Management Plan
2004

Highway 36E Fuel Break (Zones 4,5,&8)

This project is described under "Multiple Zone Projects."



ZONE 4 – Manton, Sky Ranch

PRIORITY RATING: Moderate

Zone 4 is located in the northeastern portion of Tehama County and includes the rural communities of Manton and Sky Ranch. Chaparral and oak woodland are the dominant vegetation types. Grasses are often a major carrier of fire.

Multiple large wildland fires have threatened the homes and residents of communities as well as rural ranches and farms in Zone 4. The wildland urban interface area is the most at risk. The Battle Creek watershed is also at risk from fires. Water supply is adequate in the Zone but access is poor and limited. Causes of fire are primarily human activities including debris burning, equipment use and vehicle exhaust. Lightning has also caused several fires in Zone 4.

Stakeholders

Battle Creek Watershed Conservancy
Sharon Paquin-Gilmore
Email: spaquin@shasta.com
<http://www.battle-creek.net/>

P.O. Box 560
Manton, CA 96059
(530) 474-3368

Sierra Pacific Industries (SPI)
Mike Mitzel
Email: sierra@spi-ind.com
<http://www.spi-ind.com>

P.O. Box 496028
Redding, CA 96049
(530) 378-8000
(530) 378-8242

Objectives

- Identify locations for fuel breaks
- Work with Cal Trans and Public Works on roadside fuel modification
- Develop fire protection water supply infrastructure for Manton and Sky Ranch areas
- Determine initial attack capabilities at the Lassen Lodge Station

Projects

Highway 36E Fuel Break (Zones 4,5,&8)

This project is described under "Multiple Zone Projects."

Hazen Road Fuel Break Project

The Hazen Road Fuel Break Project name is derived from the road that is part of the a fuel break that will eventually run from Manton Road to Ponderosa Way on the south side of the Manton town site.

This fuel break was started in 1999 and is funded by grant

monies from the Battle Creek Watershed Conservancy. The first phase reduced the vegetation for 100 feet on both sides of Hazen Road. The second phase was to continue east from Hazen Road and connect to Ponderosa Way. In 2003, during a six-week period, using CDF fire crews and 550 goats, the "shaded fuel break" was extended to the east covering an additional 40 acres. The Tehama Fire Council and the Battle Creek Watershed Conservancy was successful in receiving additional grant funding to maintain and extend the shaded fuel break.



Hazen Road Fuel Break Project is part of the Battle Creek Defensible Fuel Profile Zone Project (Zone 4 & 5) This project is described under "Multiple Zone Projects."

Ponderosa Sky Ranch Fuel Break

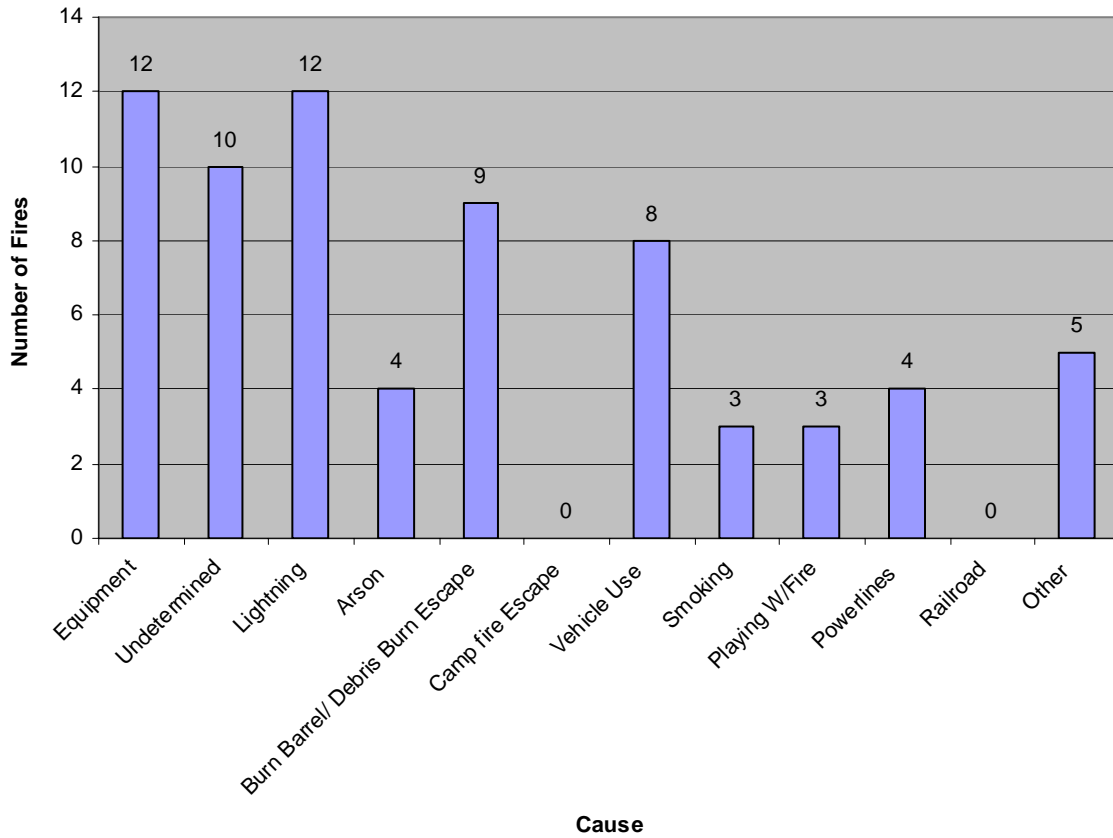


In early June of 2002, the Sky Ranch fuel break was completed using CDF equipment and fire crews from Ishi Conservation Camp. The project was initially funded by the Sky Ranch Property Owners Association

(SRPOA). The fuel break incorporates existing roads and an airport runway along with fuel reduction done by CDF dozers and CDF fire crews to form a fuel around the entire community of Ponderosa Sky Ranch. The project includes opening roads for engine access to water sources, and tree removal to provide a flight path for copters on a local pond. In 2003 the SRPOA implemented an ongoing maintenance plan to keep this vital ring or protection effective. As part of this plan, the southern portion of the fuel was widened and improved using CDF equipment and a CDF fire crew. The intent is to improve a section annually, thus reducing the costs and still preserve the fuel break.

Tehama-Glenn Unit
Fire Management Plan
2004

ZONE 4 (MANTON/PAYNES CREEK/PONDEROSA SKY RANCH)
FIRE CAUSES 1993-2003



ZONE 5 – Mill Creek, Mineral

PRIORITY RATING: Moderate

Zone 5 is located in the northeastern portion of Tehama County. Most people in the Zone live in the communities of Mineral and Mill Creek. The vegetation is primarily mixed conifer timberland. Although generally a poor carrier of fire, timberland can support large, intense fires when associated with high wind, especially when they become dry in the latter parts of the summer.

The communities and timberland are the primary assets in Zone 5. Lightning has caused almost half of the fires in the Zone during the past decade, but most of these have been small. Fires causing significant losses such as the 1992 Fountain Fire in Shasta County were due to high winds and dry weather.

Stakeholders

Mill Creek Conservancy

Burt Bundy

Email: bundy@water.ca.gov

<http://www.csuchico.edu/watershed/millcreek>

P.O. Box 188

Los Molinos, CA 96061

(530) 384-2734

Sierra Pacific Industries (SPI)

Mike Mitzel

Email: sierra@spi-ind.com

<http://www.spi-ind.com>

P.O. Box 496028

Redding, CA 96049

(530) 378-8000

(530) 378-8242

Objectives

- Identify locations for fuel breaks
- Conduct residential fire safe inspections in Mineral and Mill Creek Areas
- Implement equipment inspection and timber harvest inspection programs
- Determine initial attack capabilities at the Lassen Lodge Station

Projects

Battle Creek Defensible Fuel Profile Zone Project (Zone 4 & 5)

This project is described under “Multiple Zone Projects.”

Panther Spring Boondocks Fuels Reduction Project.

The project area is located approximately 10 miles southeast of Payne’s Creek and involves 620 acres. The project area surrounds the “Boondocks” community and is therefore of significance due to wildland/urban interface issues. The goal is to reduce surface and ladder fuels to help protect the community and reduce the intensity and severity of wildfire. Some thinning of understory shrubs and trees less than 8” dbh and

piling is anticipated along private property boundaries and control lines. Existing roads, trails, and natural barriers will be used for control lines where available. Any constructed lines will be by hand. Project implementation is expected to be October of 2003

Westward to Cold Spring Fuel Break Project.

This project is located 6 miles west of Butte Meadows and involves approximately 200 acres. This project will be done in two phases. Phase 1 will involve thinning understory shrubs and trees less than 8" dbh and piling for fall burning. Phase 2 will involve understory burning to reduce residual fuels. This project is being proposed to help complete the H-Line Fuel Break being constructed cooperatively by Sierra Pacific Industries and CDF. The fuel break starts at Soda Springs on Highway 32 and extends to Campbellville and Cohasset Ridge. Control lines will be constructed by hand.

Mill Creek LLC Shaded Fuel Break (MILL CREEK HOMESITES FUELS)

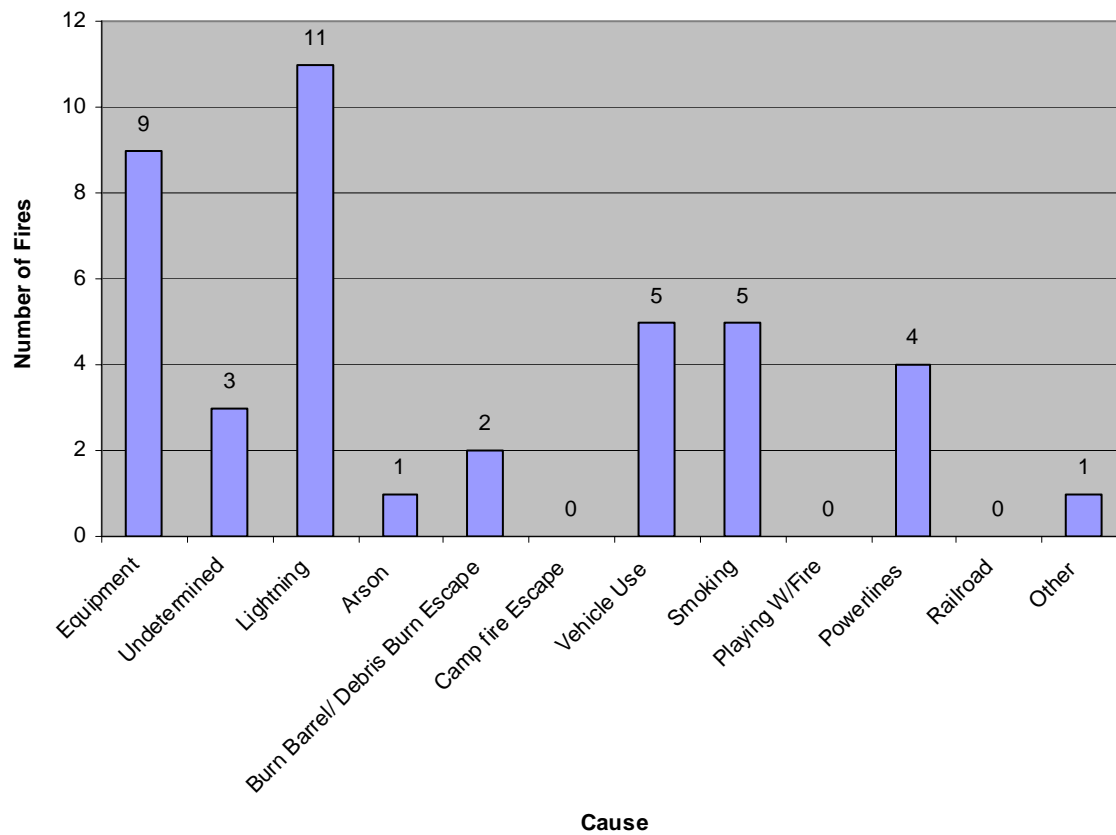
Project work will consist of thinning overstocked stands and reducing down fuels. As a result, a shaded fuel break will be created that will protect the industrial and non-industrial lands private lands around the community of Mill Creek as well as federal lands managed by the Lassen National Forest. The project area is expected to total roughly 320 acres. Project will be implemented with the support of RAC funding.

Mt. Lassen Church Camp Fuels Reduction

This 10-acre fuels reduction project consists of hand thinning, piling, and pile burning in order to reduce wildfire hazard in the interface area between the Lassen National Forest and the Mt Lassen Church Camp

Tehama-Glenn Unit
Fire Management Plan
2004

ZONE 5 (MINERAL/MILL CREEK)
FIRE CAUSES 1993-2003



ZONE 6 – Live Oak, West Red Bluff

PRIORITY RATING: High

Zone 6 is located in central Tehama County. Human population is concentrated in the eastern part of the Zone in Red Bluff. There are many rural ranch houses in the area. The ranch houses and their rangelands as well as the communities of Zone 6 are considered the primary assets at risk of fire. Arson and other human activities are a significant cause of fire in the Zone. Equipment use, arson, controlled/debris burn escapes and other undetermined human activities caused over half of the fires in the past decade.

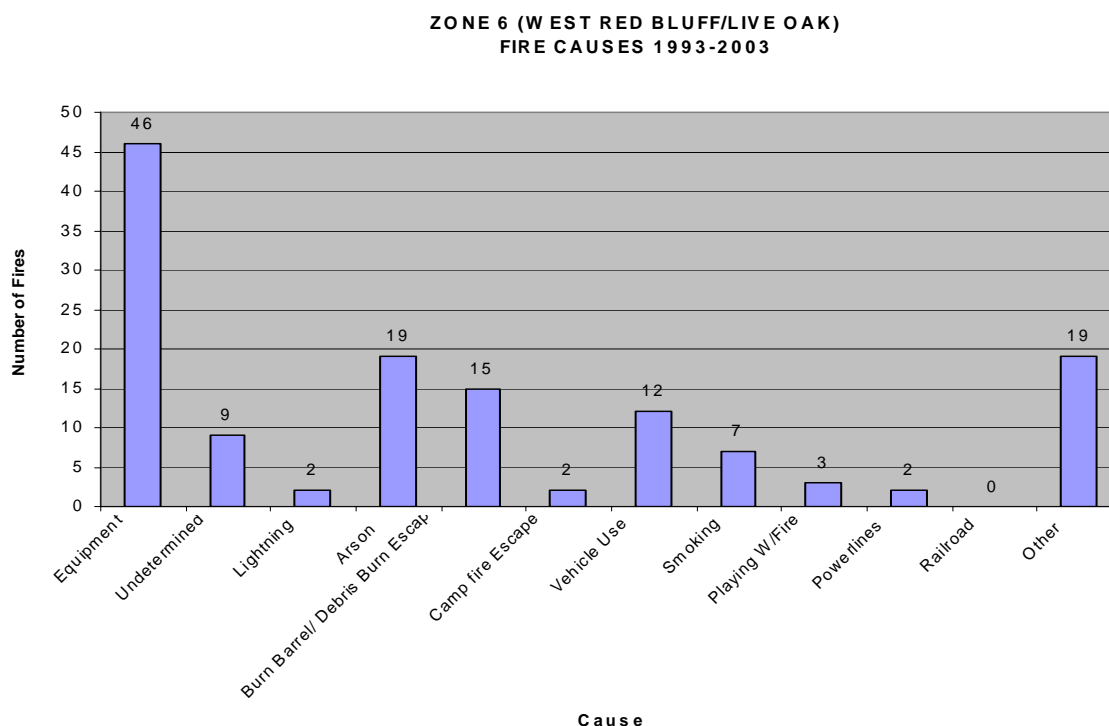
Stakeholders

Reeds – Red Bank Landowners Group
Tehama County Resource Conservation District
[Vicky Dawley](#)
Email: vicky-dawley@ca.nacdn.net

2 Sutter Street, Suite D
Red Bluff, CA 96080
(530) 527-3013 ext. 3
FAX (530) 527-7451

Objectives

- Conduct residential fire safe inspections in target areas
- Determine initial attack capabilities at the Red Bank Station



ZONE 7 – Vina Plains

PRIORITY RATING: Low

Zone 7 is located on the valley floor from central to southern Tehama County. There are no communities in the Zone. Vegetation is primarily grassland and grass-dominated oak-woodland. Grass is the major carrier of fire and has the potential to carry fires from the populated western portion of the Zone into the foothills on the eastern side of the valley.

Rangeland and prime fisheries are the main assets at risk from fire. Most fires in Zone 7 are due to human activities at the western edge in the wildland urban interface. Equipment use and debris burning are the two most common specific causes of fire.

Stakeholders

Mill Creek Conservancy
Mike Mitzel
Email: mmitzel@spi-ind.com
<http://www.csuchico.edu/watershed/millcreek>

P.O. Box 188
Los Molinos, CA 96061
(530) 384-2734
FAX (530) 595-4470

Deer Creek Watershed Conservancy
Diane Gaumer
Email: dcwcdianne@shocking.com
<http://deercreekconservancy.com/index.html>

P.O. Box 307
Vina, CA 96092
(530) 891-8636

The Nature Conservancy
Peter Hujik
Email: phujik@tnc.org
<http://www.tnccalifornia.org>

11010 Foothill Road
Los Molinos, CA 96055
(530) 527-0420
FAX (530) 527-0384

Objectives

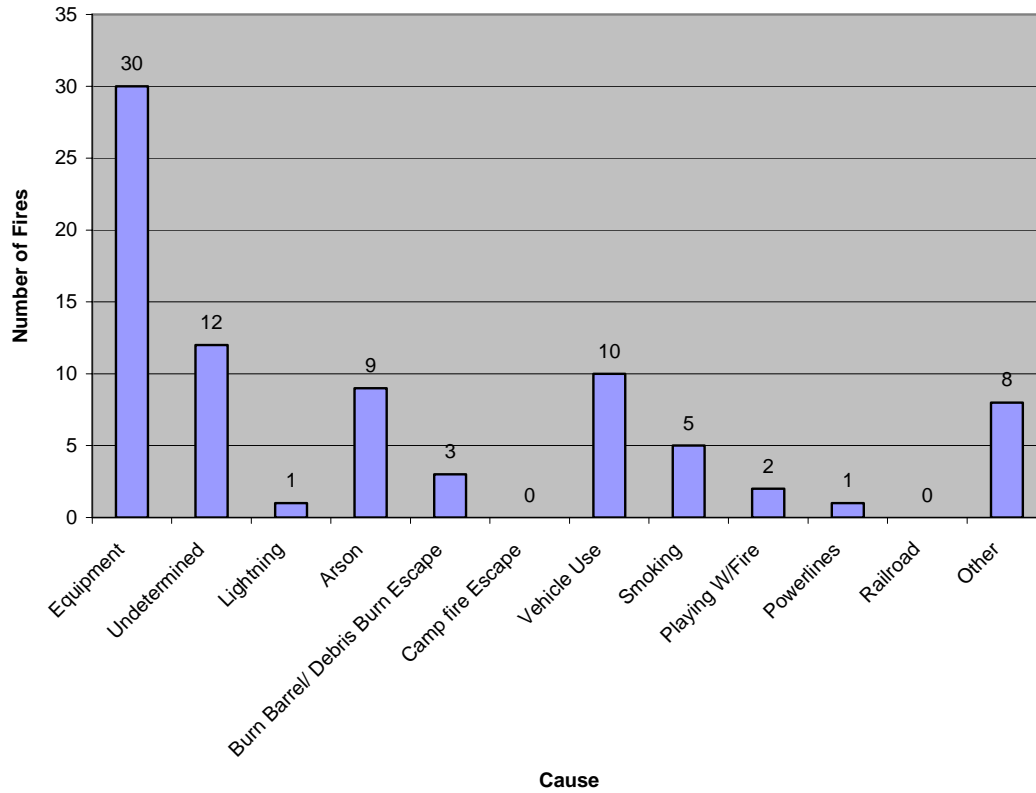
Reduce the threat of wildfires spreading into the urban area
Reduce fire starts in the urban area that threaten the wildland

Projects

Lassen Foothills Range Management (Zones 3, 7 & 8)
This project is described under “Multiple Zone Projects.”

Tehama-Glenn Unit
Fire Management Plan
2004

ZONE 7 (VINA PLAINS)
FIRE CAUSES 1993-2003



ZONE 8 – Ishi, Paynes Creek

PRIORITY RATING: Moderate

Zone 8 is located in the eastern foothills of Tehama County and contains the rural community of Paynes Creek. Oak-woodland and chaparral are the predominant vegetation types in the Zone while grasses are often the major carrier of fire. Fast spreading grass/chaparral fires pose the greatest threat in the low elevations of Zone 8 while high intensity fires of woodlands present the most significant threat in high elevations.

Protection from fires in the Zone is most needed for the watersheds of Antelope, Dye, Mill and Deer creeks and rangeland used for livestock grazing. Lightning and power lines have caused several large fires. Most smaller fires are due to equipment use, arson and vehicle exhaust.

Stakeholders

Sierra Pacific Industries (SPI)
Mike Mitzel
Email: sierra@spi-ind.com
<http://www.spi-ind.com>

P.O. Box 496028
Redding, CA 96049
(530) 378-8000
(530) 378-8242

Mill Creek Conservancy
Mike Mitzel
Email: mmitzel@spi-ind.com
<http://www.csuchico.edu/watershed/millcreek>

P.O. Box 188
Los Molinos, CA 96061
(530) 384-2734
FAX (530) 595-4470

Deer Creek Watershed Conservancy
[Diane Gaumer](#)
Email: dcwcdianne@shocking.com
<http://deercreekconservancy.com/index.html>

P.O. Box 307
Vina, CA 96092
(530) 891-8636

The Nature Conservancy
Peter Hujik
Email: phujik@tnc.org
<http://www.tnccalifornia.org>

11010 Foothill Road
Los Molinos, CA 96055
(530) 527-0420
FAX (530) 527-0384

Objectives

- Identify locations for fuel breaks
- Determine effectiveness of initial attack capabilities and accessibility issues
- Determine fire detection capabilities (particularly during lightning and/or high wind events)

Projects

Lassen Foothills Range Management (Zones 3, 7 & 8)

This project is described under "Multiple Zone Projects."

Paynes Creek Sportsman Club

The Paynes Creek Sportsman Club and the California Department of Forestry and Fire Protection are partnering in a wildland/urban interface project, which will address fire and fuels management issues as well improve wildlife habitat. The project area encompasses approximately 1500 acres. Although still in the early stages of planning, the project initially calls for about 500 acres of brush crushing and winter burning. The overall goal of the project is to provide defensible space for cabins located inside the project boundaries. Project work is also expected to improve wildlife habitat in the area. Project work is tentatively scheduled for the fall of 2003 or the spring of 2004.

Highway 36E Fuel Break

When completed, this 16 mile shaded fuel break between Paynes Creek and Mineral is expected to provide an effective east-west break in fuels along both sides of Battle Creek Canyon. Participants in the project design and completion include the CalTrans and the California Department of Forestry and fire Protection. As of 2003, 2 miles of the project's length have been completed; 6 miles of work are in progress with eight addition miles planned for future years.

Hogback/Plum Creek Fuels Reduction Project (Hogsback Ridge Fire Management)

This project is located approximately 5 miles south of the Community of Paynes Creek. It involves prescribed burning on about 3400 acres of land managed largely by the U.S. Forest Service. Roughly 325 acres is located on Tehama State Wildlife Area lands. The goal of the project is to reduce the intensity/severity of a wildland fire. Much of the area borders on or was impacted by past large fires including the Finley (1990), Dehaven (1999), and Gun 2 (1999). One area, a pine plantation of approximately 40 acres on Ponderosa Road, will require some understory brush reduction prior to burning.

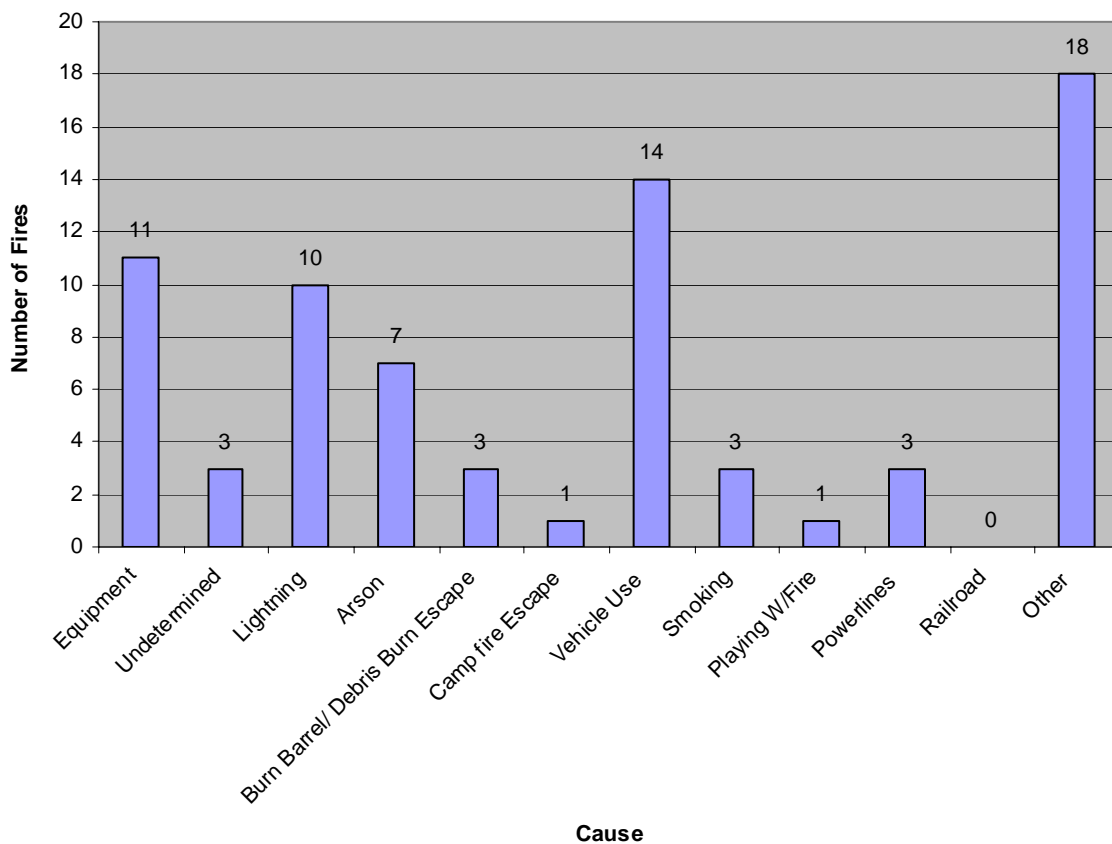
The project calls for low to moderate intensity prescribed burns extending approximately 500-600 feet on both sides of Plum Creek Road and Hogsback Road. The goal is to retain 50-70% of the brush in order to provide cover for migrating deer herds, reduce the intensity and severity of wildfire, and provide a ridgetop fuel break to assist in fire suppression activities. Some brush removal is anticipated along control lines (against private property boundaries and on the north and south containment lines). It is anticipated that brush removal and line construction will be by hand but a dozer may be used if there is concurrence by resource specialists (archeology, botany, wildlife, and hydrology).

In addition, low to moderate prescribed burns will be executed throughout the entire unit. In order to reduce the intensity and severity of wildfire, approximately 40 to 80% of the

Tehama-Glenn Unit
Fire Management Plan
2004

brush and down woody material will be removed throughout the various project units. One portion (SE ¼ of SE ¼ Sec. 12) is a young pine plantation that will require some understory brush reduction prior to burning. This will be done by hand or mastication. Existing roads and natural barriers will be used for control lines where available. Any constructed control lines will be done by hand. It is anticipated no control lines will need to be constructed except where necessary to protect sensitive areas.

ZONE 8 (ISHI WILDERNESS)
FIRE CAUSES 1993-2003



ZONE 9 – Flourney, Rancho Tehama

PRIORITY RATING: High

Zone 9 encompasses much of the southern portion of Tehama County and includes the primarily residential communities of Flourney and Rancho Tehama. Vegetation is a mixture of grassland, chaparral and woodland. Grasses are the major carrier of fire. Zone 9 has the second highest occurrence of fires during the period from 1990 to 2001. High winds in the Zone threaten to spread fires rapidly. Approximately one-third of the fires were caused by equipment use. Arson, vehicle exhaust and smoking were also significant fire causes.

Stakeholders

Tehama County Resource Conservation District

[Vicky Dawley](#)

Email: vicky-dawley@ca.nacdn.net

2 Sutter Street, Suite D

Red Bluff, CA 96080

(530) 527-3013 ext. 3

FAX (530) 527-7451

Objectives

- Design fuel breaks
- Work with Public Works to modify roadside fuel loading
- Continue to improve Rancho Tehama area's water supply source
- Continue focused residential inspections in Rancho Tehama area
- Design a focused fire prevention program for the Rancho Tehama community
- Design a evacuation plan for the Rancho Tehama community
- Review effectiveness of initial attack capabilities at Paskenta Station

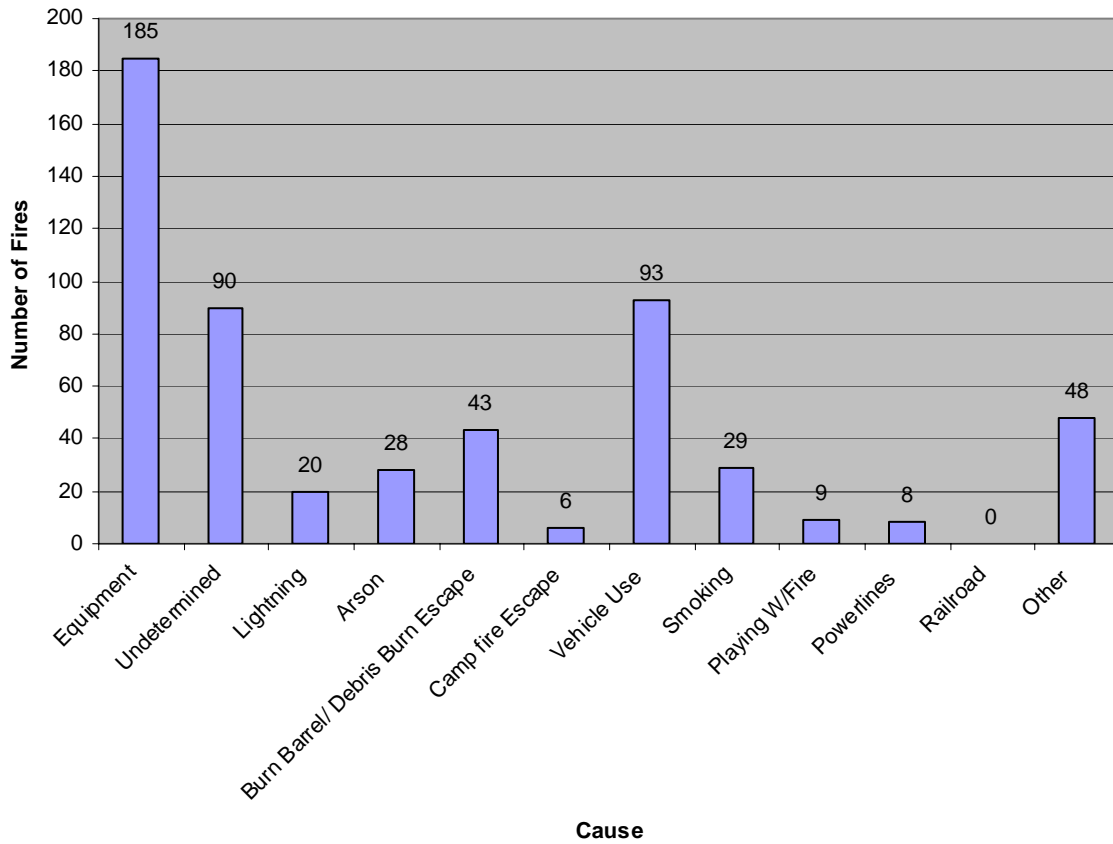
Projects

Rancho Tehama Water Tanks

Zone nine in which the Rancho Tehama community is located, has limited water sources and water storing facilities available for use when wildfires occur. The Rancho Tehama Water projects entail the installation of cisterns in which water for fire fighting can be stored. Two of the facilities were completed in 2001 and two more are expected to be in place and available for use in 2004.

Tehama-Glenn Unit
Fire Management Plan
2004

**ZONE 9 (RANCHO TEHAMA/FLOURNOY)
FIRE CAUSES 1993-2003**



ZONE 10 – Glenn County (SRA)

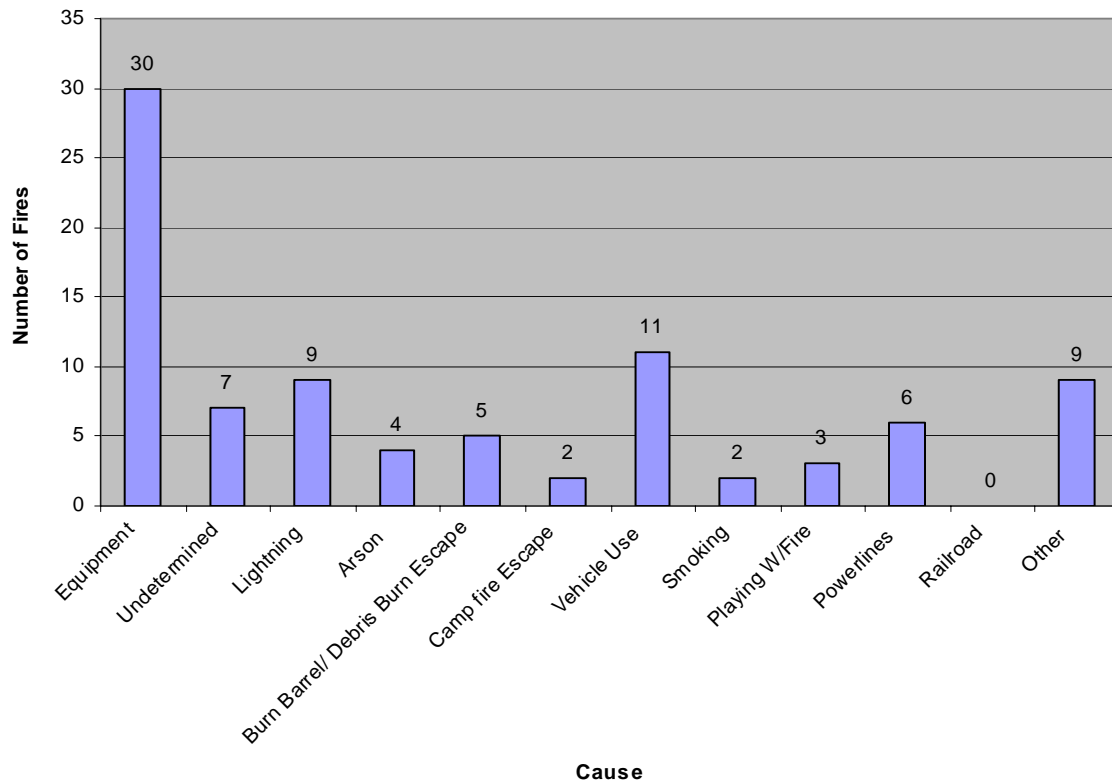
PRIORITY RATING: Low

Zone 10 encompasses much of the western portion of Glenn County. Outside the community of Elk Creek, population is dispersed through the Zone in ranches and rural homes. Vegetation is a mixture of grassland, chaparral and woodland. Grass is the major carrier of fire. Historically, major fires in Zone 10 have been spread by grass and chaparral and were associated with high winds and low humidity. These fires threatened residences, range and agricultural lands, and recreation centers in Glenn County. The leading causes of fires from 1993 to 2003 were equipment use and vehicle exhaust.

Objectives

- Work with Cal Trans Public Works to reduce roadside fuel hazards
- Continue Highway 162 fuel break project (annual roadside strip burning)
- Continue Residential fire safe inspections in target areas
- Focus fire prevention programs on hardwood harvesting operations

**ZONE 10 (GLENN COUNTY)
FIRES CAUSES 1993-2003**



Federal Response Area East

Humboldt Summit Prescribed Burn

The Almanor District of the Lassen National Forest proposes to execute a moderate intensity 430 acre prescribed burn designed to reduce surface fuels and create a mosaic of vegetative patterns that is expected to improve wildlife habitat. Included in the acreage total will be a roughly 200 acres Defensible Fuel Profile Zone. Approximately 290 acres of the project area will be within Tehama County with the remaining acreage in Butte County.

Federal Response Area West

Felkner Understory Burn

The Mendocino National Forest is planning an approximately 500-acre fuels reduction project in southwestern Glenn County starting in the spring of 2003 and continuing for a total of 5 years. The project will entail broadcast burning of slash and hand piled material generated in connection with plantation thinning of a previously logged site. Project work is expected to provide a reduction in accumulated fuels and the risk of stand replacing wildfire, as well as the release of a young timber stand

Alder Springs Mechanical Fuel Treatment

In addition to the use of prescribed fire as a means to reduce fuel loading, the Grindstone District of the Mendocino National Forests is planning to excavate and chip on site, chaparral plant material within Grindstone Creek.

Salt Log Chaparral Burning

The Mendocino National Forest conducted prescribed burn with chaparral ecosystems on Hardin Ridge, Shepard Ridge, Self Ridge, McGill Ridge, and San Hedrin Ridge. The goal of the project was to reduce fuels, maintain firebreaks, and improve wildlife habitat.

Forest Highway 7 Underburn

This Forest Service fuels reduction project is now in the completion stage and is expected to entail the burning of roughly 163 acres of timberland and brush land near Alder Springs.

Oak Ridge Project

Currently in the planning stage, this 4000 acre wildlife and fuels driven project on Forest Service lands within Tehama County will entail chaparral burning, thinning, and timber stand thinning as well as underburning. The project is expected to be funded by the Turkey Federation as well as federal fuels management funds. Project work will be conducted incrementally and will take approximately 10 years to complete.

Telephone Pole Timber Sale

During 2002, fuels reduction work was completed in connection with the Telephone Pole Timber Sale.

In addition to these specific projects, fuels management personnel on the Mendocino Forest expect to burn between 2500 and 3000 acres of chaparral per year on various projects. Type conversion maintenance projects will also be started in the next several years, which will reduce vegetation within key, fuel breaks on many ridges throughout the eastside of the forest.

B. Projects in Multiple Zones

Battle Creek Defensible Fuel Profile Zone Project (Zone 4 & 5)

The Battle Creek Watershed Conservancy (BCWC), Sierra Pacific Industries, California Department of Forestry and Fire Protection, and the United States Forest Service recognize the importance of fire defense improvements and fuels reduction in preventing catastrophic wildfire. To achieve their goal of fire prevention, this group of landowners and land managers have initiated a program of constructing shaded fuel breaks and defensible fuel profile zones within the watershed. The group has also begun implementing actions for the reduction of excessive fuel loads in the upper watershed. Along with the shaded fuel break in process along Hazen Road in Manton, additional fuel breaks on the north side of the watershed in the Shingletown ridge area are expected to strengthen the defensible spaces used to hold fires. Through public outreach and the Hazen Road demonstration project, the BCWC emphasizes the clear link between the need and benefit of defensible spaces on small and large properties and the potential impact of catastrophic fire in the watershed.

The BCWC Board has contracted with CDF to implement a 100' wide five-mile long shaded fuel break along both sides of Hazen Road in Manton to connect Manton Road with Ponderosa Way. The initial 5 mile portion of this project has been completed. Another 2 miles is expected to be completed in 2003. The Board has contracted with the Lassen National Forest to develop a Fuels Management Strategy between Sierra Pacific Industries and the United States Forest Service on their lands within the Battle Creek watershed. The strategy will include a field verified fuel loading inventory; development of a shaded fuel break or defensible fuel profile zone plan; and site specific treatment and priority recommendations for all areas identified as having excessive fuel loadings. This portion of the project is also expected to be completed in 2003. The BCWC Board will be seeking funding to maintain the Hazen Road fuel break and to implement the Fuels Management Strategy developed by Sierra Pacific Industries and the Lassen National Forest. It is also hoping to implement an additional 20 miles of shaded fuel breaks on the north side of the Battle Creek watershed including Shingletown ridge as well as along Ponderosa way to Mineral pending further funding.

Highway 36E Fuel Break (Zones 3,4,5&8)

This is a shaded fuel break(s) and fuel reductions along 36E from Hog Lake area to the Plumas County line. The project(s) are funded by CalTrans and meet their sight clearance standards. The projects are ongoing although all areas are not worked every year. The costs are covered by CalTrans under normal reimbursement procedures. The

work on the CalTrans right-of-way extends for approximately 45 miles through both state and federal DPA. For 2004 we anticipate in treating nearly 25 miles of roadside.

Lassen Foothills Range Management (Zones 3, 7 & 8)

The Lassen Foothill Range Management Project encompasses three California Department of Forestry and Fire Protection zones within Tehama and Butte County. The project integrates prescribed fire use with wildfire response to manage grasslands, chaparral, and oak woodland in an ecological sustainable manner. The project is led by a coalition that includes The Nature Conservancy, ranchers and agencies in eastern Tehama County. The project was selected to participate in a national working group called the *Fire Learning Network* to facilitate collaborative landscape scale fire management.

Weed-control burns occur between May and June with an occasional small experimental burn being conducted in the fall. Normally, existing roads and wet lines are utilized to contain fire spread. Minor lengths of hand or dozer lines are needed on occasion, where existing barriers are inadequate or where fire engine access is poor. Mechanically constructed fire lines are normally constructed on previous fire lines or where primitive roads have already been developed. In 2003, 5,000 acres of burning is planned.

Deer Creek Fire Management Framework

This fire management plan attempts to establish steps that will minimize economic and environmental losses resulting from catastrophic wildfires and identify pre-fire management projects to control and mitigate sedimentation and habit loss due to severe fires. Among the plan's recommendation are:

Encourage landowners to utilize information developed through The Nature Conservancy's prescribed rangeland burning projects as well as the technical assistance and legal indemnification for such projects available through participation in the California Department of Forestry and Fire Protection's Vegetation Management Program.

- Install of signs at road junctions in order to assist out-of-area firefighters in finding access to trails, particularly in the lower watershed and promote the maintenance of such signage.
- Concentrate future fuels management efforts on creating defensible zones at the margins between the foothill grassland/chaparral and timbered areas and on the creation of more fire tolerant forest stands throughout the upper portions of the Deer Creek Watershed.
- Encourage low impact methods of fuel reduction such as forest thinning and under burning on public forestlands within the watershed, especially in those areas where relatively small projects could increase the effectiveness of private fuel reduction projects.

- Encourage the Lassen National Forest to design fuels inventories and area treatments for un-roaded areas within the upper Deer Creek Watershed.
- CDF coordination of GIS databases containing existing fuel break projects and forest conditions within State Responsibility Areas.

Tehama West Fire Plan

The Tehama County Resource Conservation District (TCRCD) has recently submitted a grant application under the National Fire Plan's Economic Action Program in order to finance the preparation of the Tehama West Fire Plan. When completed, the document will provide site-specific information on land use, fire prevention infrastructure, fuels and communities within CDF zones 1, 6, and 9, which encompasses approximately 700,000 acres within western Tehama County. The plan will also discuss the interrelated nature of fire and fuels projects within adjacent national forest lands with those found on private lands inside the CDF zones. With this information, the TCRCD expects to provide convincing arguments for the value of specific projects when applying for fire and resource conservation grants. Of particular interest to the Tehama County district are projects for fire safety, fire education, and fuels reduction road mapping watershed improvement projects along with wildlife habitat improvement projects.

C. Action Plan



Without question pre-fire management activities are paramount to reducing the impact of catastrophic wildland fire on life and property. Fire safe planning and hazardous fuel reduction is a collaborative effort involving public and private entities and citizens groups, and their ability to cooperatively plan, organize, staff, evaluate and control pre-fire management activities. Key to the continued success of pre-fire management activities is the consistent availability of grant funds through the National Fire Plan and other sources. This plan serves as the blueprint from which fire safe planning and hazardous fuel reduction projects develop within Tehama and Glenn Counties.

The following table describes fire safe and hazardous fuel reduction projects completed as well as proposed projects with targeted completion dates over the next 5 years. Assumptions are made about funding, resources, environmental issues, and duration of tasks. This action plan will be reviewed annually for stakeholder involvement and fire safe council activity, changes in local land use plans, changes in the local wildland fire environment, and new data related to the fire plan assessments incorporated as it becomes available.

The Tehama-Glenn Unit Fire Management Plan was developed to address fire safe planning and hazardous fuel reduction concerns of federal, state & local fire agencies,

Tehama-Glenn Unit
Fire Management Plan
2004

fire safe councils and other stakeholders. The Fire Plan incorporates an across the board approach to reducing the occurrence and impact of wildland fire through a coordinated effort involving law enforcement (PRC-4291 defensible space requirements), education and information, community fire safe and evacuation planning, as well as hazardous fuels reduction.

In total, the Tehama Glenn Fire Management Plan incorporates over 1,509,000 acres of hazardous fuel reduction and 81 miles of shaded fuel breaks averaging 300 ft wide. A large portion of this project work focuses on fire hazards and fuel loading in and around communities in the interface zone along with strategic locations found on public and private lands. The emphasis on fuel reduction will be to educate, enforce and assist homeowners in creating defensible space on their property.

Shaded fuel breaks are another significant component of the overall fuel reduction effort within the CDF's Tehama – Glenn Unit which focus on those fuel breaks that support the safe ingress of fire suppression forces and egress of civilians in and around communities. Some of the shaded fuel breaks included within this plan are a part of the Herger-Feinstein Quincy Library Group (HFQLG). The Herger-Feinstein Quincy Library Group Forest Recovery Act is a cohesive strategy designed to address hazardous fuel reduction and fire protection. Others include cooperative efforts to manage fuels between large private landowners, such as Sierra Pacific Industries and CDF under the Vegetative Management Program.

Summary of Completed Projects and those Proposed over the next 10 years

The following maps and tables provide the general location and a list of Fire Safe planning and hazardous fuel reduction projects within Tehama and Glenn Counties that have been recently completed, underway, or planned as a part of the Tehama-Glenn Unit Fire Management Plan, California and National Fire Plans.

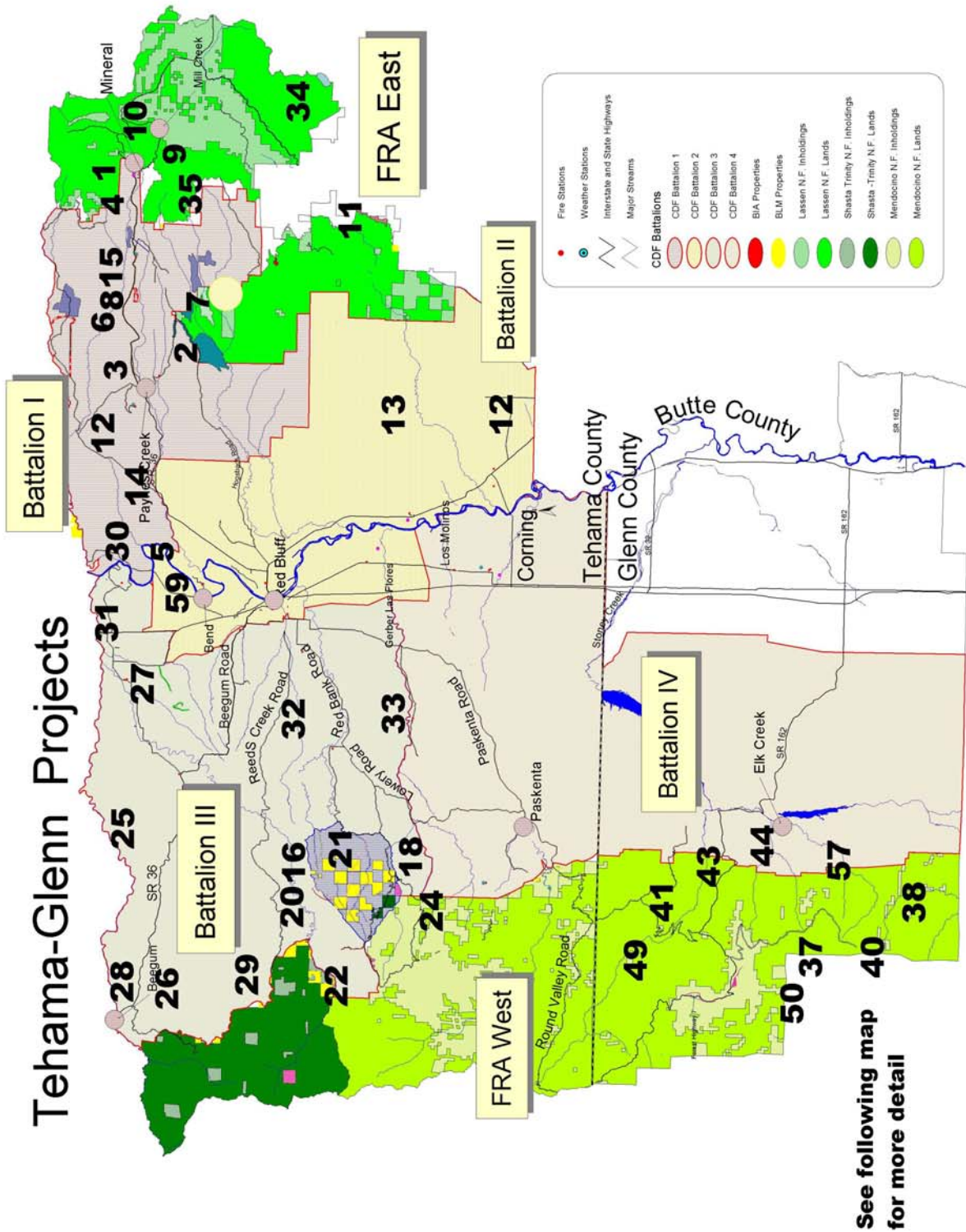
The reference numbers in this table refer to numbers on the following four maps.

Reference #	Battalion	Fire Management Project Name
1	1	Battle Creek DFPZ
2	1	Hogsback Plum Creek Fuels Reduction Project
3	1	Hazen Road Fuel Break
4	1	Highway 36 Powerline Fuel Break
5	1	Bend Boundary
6	1	Battle Creek Defensible Fuel Profile Zone
7	1	Panther Springs/Boondocks
8	1	Ponderosa Sky Ranch Fuel Break
9	1	Mineral Fuel Break
10	1	Mill Creek LLC Shaded Fuel Break
11	1	Cold Springs Fuel Break
12	1,2	Lassen Foothills Range Management
13	2	Deer Creek Fire Management Framework
14	2	Paynes Creek Sportsmen Club

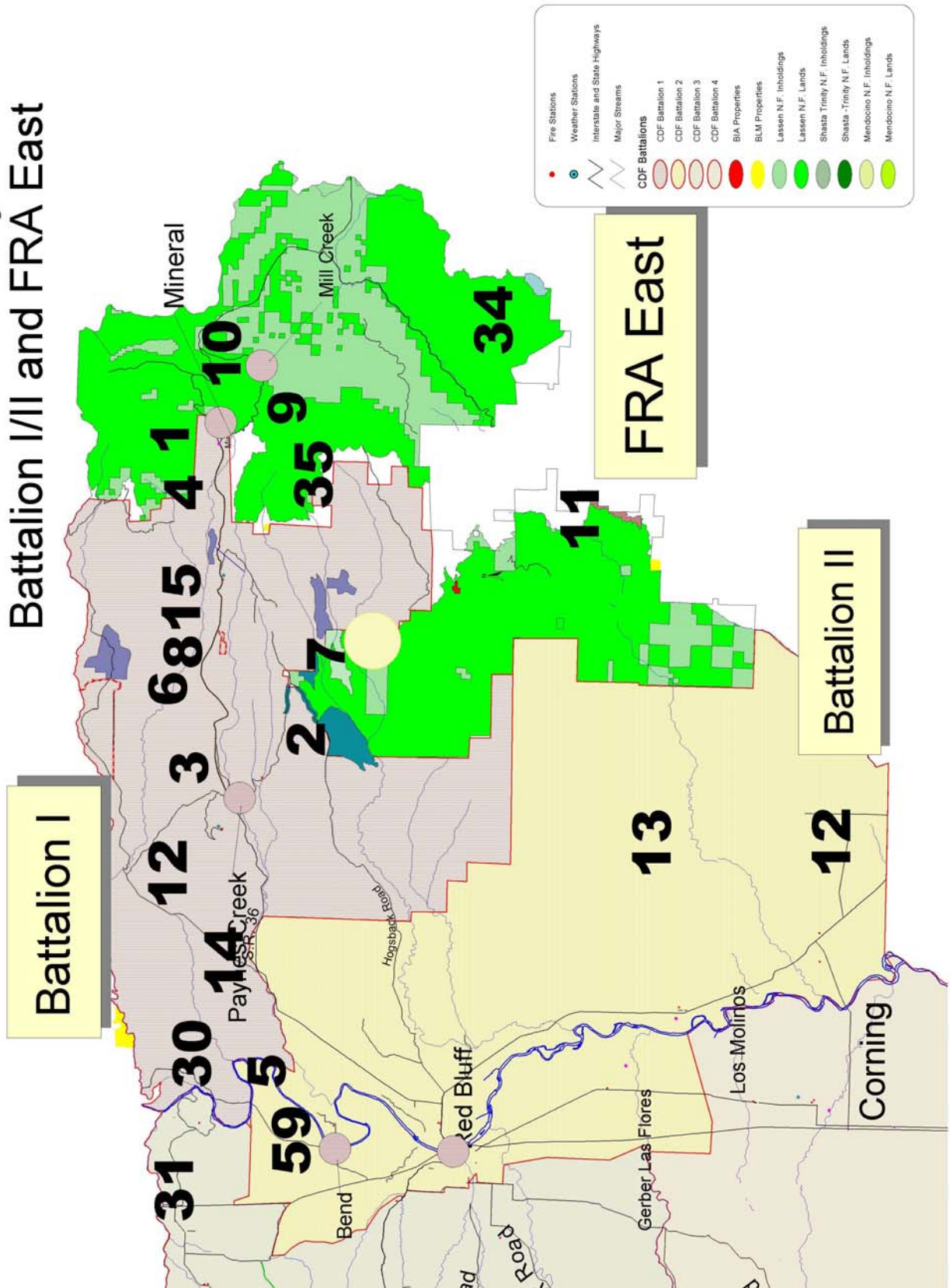
Tehama-Glenn Unit
Fire Management Plan
2004

15	2	Highway 36E Fuel Break
16	3	Sunflower Lanyon Fuel Break
17	3	Sunflower Vegetation Management
18	3	Sunflower Mechanical Treatment
19	3	Sunflower Flat Water Development
20	3	North Red Bank Shaded Fuel Break
21	3	Sunflower Broadcast Burns
22	3	Crane Mills Shaded Fuel Break
23	3	Proposed Extension Crane Mills Shaded Fuel Break
24	3	Valentine Ridge/Colyear Springs Fuel Break
25	3	Cottonwood Creek Fire Management Plan
26	3	Tedoc Mountain CRMP-Phase 1
27	3	Quail Ridge Water Storage
28	3	Platina Fuel Break
29	3	Hammer Loop Fuel Break
30	3	Lake California Fuels Reduction
31	3	Lake California Multi-Hazard Evacuation Plan
32	3,4	Tehama West Fire Plan
33	4	Rancho Tehama Water Tanks
34	FRA-E	Humboldt Summit Prescribed Burn
35	FRA-E	Mt. Lassen Church Camp Fuels Reduction
36	FRA-W	Alder Springs Fuel Break
37	FRA-W	Felkner Underburn
38	FRA-W	Spanish Fire Restoration
39	FRA-W	Alder Springs Mechanical Fuel Treatments
40	FRA-W	Felkner Understory Burn
41	FRA-W	Salt Log Chaparral Burning
42	FRA-W	Forest Highway 7 Underburn
43	FRA-W	Long Point Underburn
44	FRA-W	Sky-Hi Community Protection Project
45	FRA-W	Grindstone Chaparral Project
46	FRA-W	Type Conversion Maintenance
47	FRA-W	Oak Ridge Project
48	FRA-W	Telephone Pole Timber Sale
49	FRA-W	KOP Timber Sale
50	FRA-W	Cold Chimney Timber Sale
51	FRA-W	Flat Timber Sale
52	FRA-W	Gibson Timber
53	FRA-W	Town Timber Sale
54	FRA-W	Fuel Break Maintenance
55	FRA-W	Salt Log Timber sale
56	FRA-W	Misc. Chaparral Burning
57	FRA-W	Dixon Orchard Shaded Fuel Break
58	FRA-W	Shaded Fuel Break
59	LRA	Rio Vista Tract 8.2

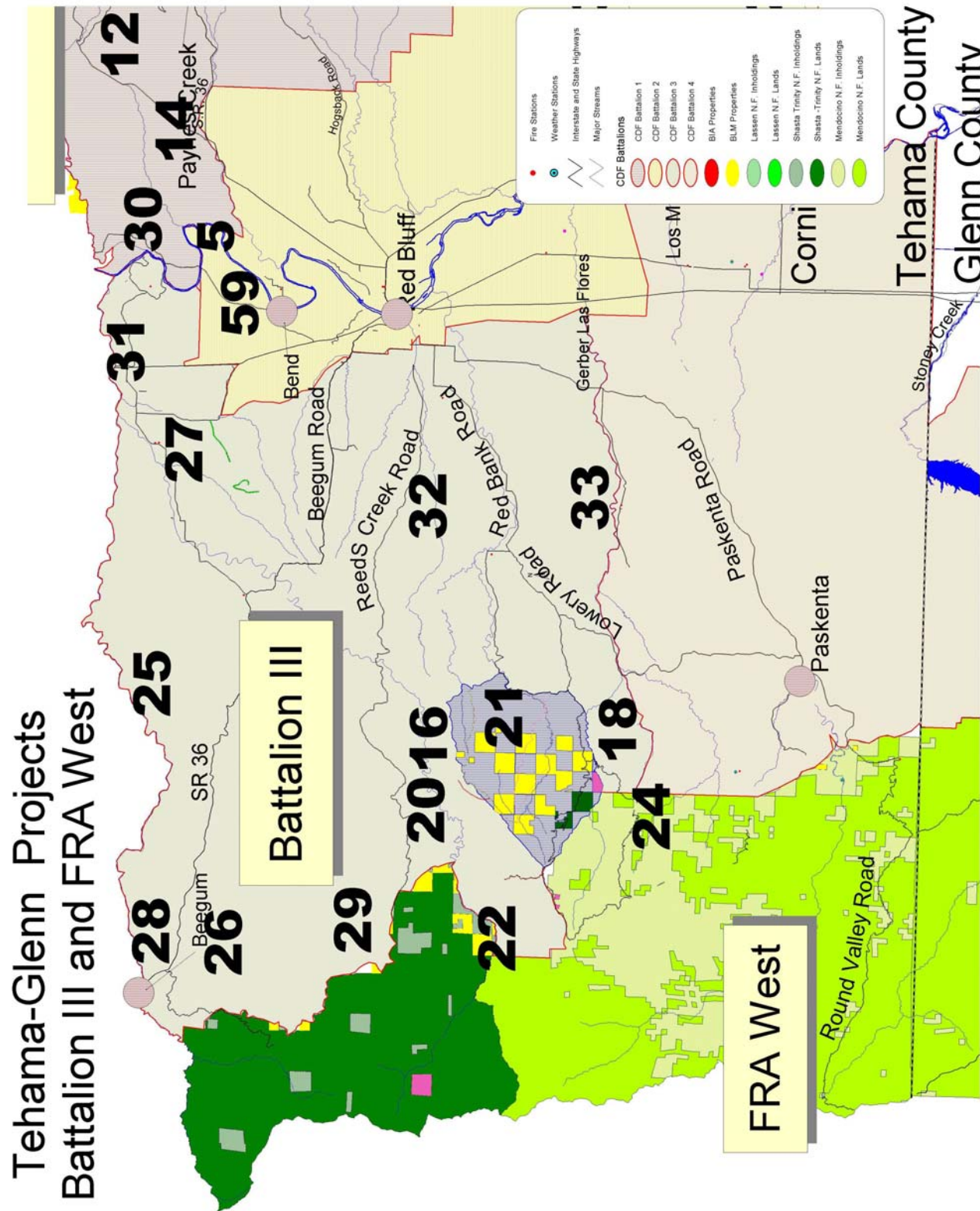
Tehama-Glenn Unit
Fire Management Plan
2004



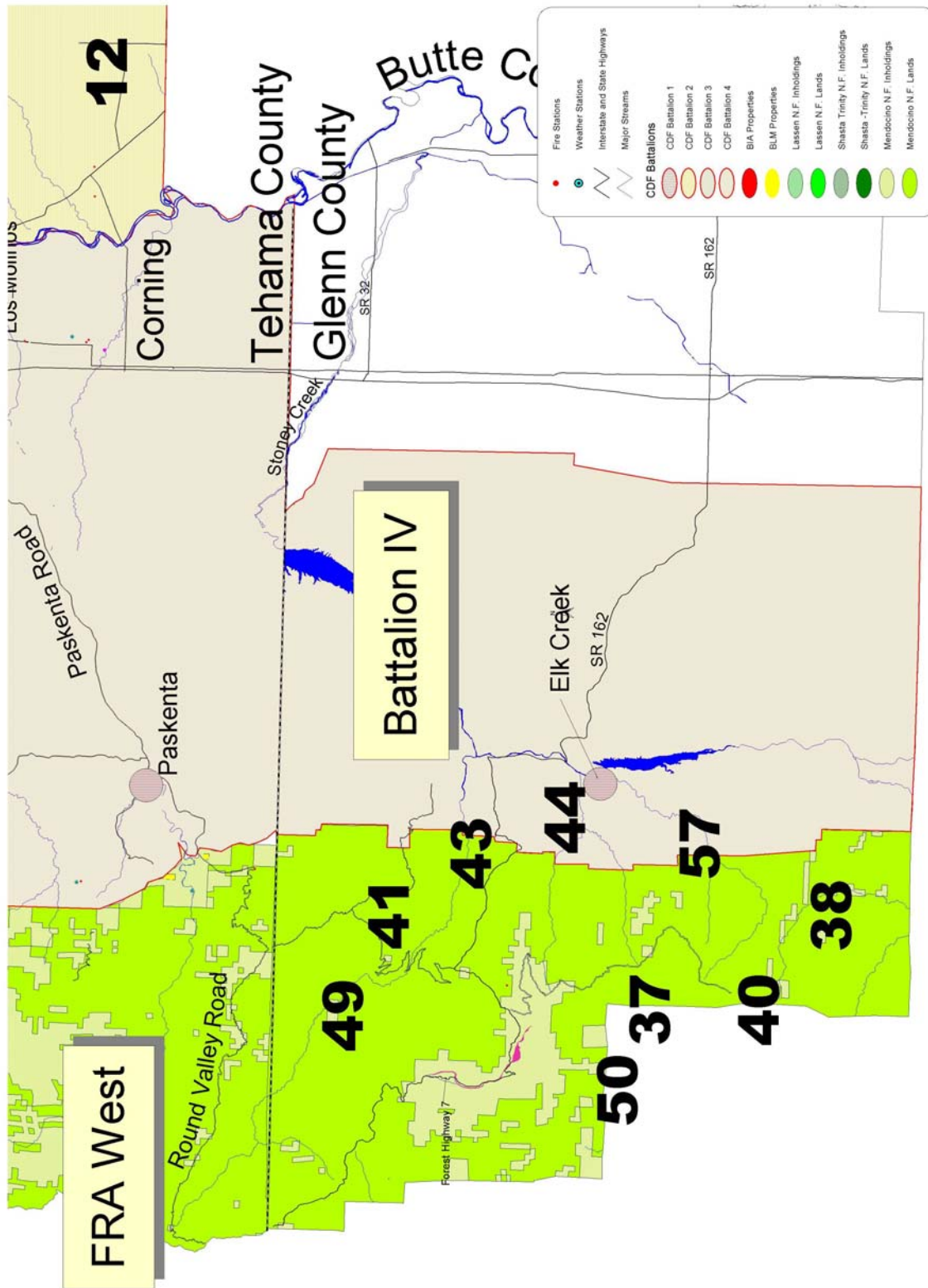
Tehama-Glenn Projects Battalion I/II and FRA East



Tehama-Glenn Unit
Fire Management Plan
2004



Tehama-Glenn Unit
Fire Management Plan
2004



Tehama-Glenn Projects
Battalion IV and FRA West

**Tehama-Glenn Unit
Fire Management Plan
2003**

Zone	Battalion	Plan Year	Fire Management Project Name	Contact Person	Comment/Status	Urban Interface Area*			Wildland (Open) Area			Ownership				
						Area or Distance			Area or Distance			USFS	BLM	Other	Private Industrial	Private Non-Industrial
						Complete	In Progress	Planned	Complete	In Progress	Planned					
5	1	04	Battle Creek DFPZ	Ron Perry	Planned to be completed during the summer of 04 Project area is around the community of Mineral			899				899				
3	1	03	Hogsback Plum Creek Fuels Reduction Project (Hogsback Ridge Fire Management)	Tom Garcia	Planned to be completed during the summer of 04			675			2725 acres	3200 acres		200 acres		
3	1	01 +	Hazen Road Fuel Break	Mike Mitsel	Work to begin in 2005			14							14	
3	1	03	Highway 36 Powerline Fuel Break	Mike Mitsel	70 Foot wide fuel hazard reduction project along the south side of Highway 36 under power lines east and west of Mineral	2 Miles										
3	1	04	Bend Boundary	Walter Herzog	Prescribed fire near BLM Bend boundary.			120 Acres					120 Acres			
4,5	1	01 +	Battle Creek Defensible Fuel Profile Zone	Sharon Gilmore	RAC grant submitted in '03.	5 Miles	2 Miles	20 Miles								
5	1	03	Panther Springs/ Boondocks	Tom Garcia	CDF may work with Boondocks in '04. Planned to be completed during the summer of 04			580 acres				580 Acres				
5	1	02	Ponderosa Sky Ranch Fuel Break	Gary Lyon					2 Miles							

Tehama-Glenn Unit
Fire Management Plan
2003

Zone	Battalion	Plan Year	Fire Management Project Name	Contact Person	Comment/Status	Urban Interface Area*			Wildland (Open) Area			Ownership				
						Area or Distance			Area or Distance			USFS	BLM	Other	Private Industrial	Private Non-Industrial
						Complete	In Progress	Planned	Complete	In Progress	Planned					
5	1	03	Mineral Fuel Break	Gary Lyon	Goat maintenance scheduled in '03							60%			30%	10%
5	1		Mill Creek LLC Shaded Fuel Break	Ken Larson	RAC proposal submitted in '03. Contract awarded			100 acres				120 acres			100 acres	100 Acres
5	1	03	Cold Springs Fuel Break	Ken Larson	Funded in part by RAC in '03				10 Acres		200 Acres	200 Acres				
3,7,8,	1,2	96 +	Lassen Foothills Range Management	Peter Hujik	Includes Rx fire & wildfire response				20,583 acres	3,000 acres	70,848 acres		1,055 acres	830 acres		18,698 acres
-	2	00	Deer Creek Fire Management Framework	Diane Gaumer							20,000 acres	4,000 Acres				16,000 Acres
8	2	03-04	Paynes Creek Sportsmen Club	Gary Lyon	Planned mechanical treatment & firebreak		1 Mile	500 acres								500 Acres
8	2	03	Highway 36E Fuel Break	Caltrans	Shaded fuel break in right of way.				2 Miles	6 Miles	8 Miles					
1	3	02 +	Sunflower Lanyon Fuel Break	Bill Burrows	Mechanical treatment completed in '02.					20 Miles (700 Acres)			140 Acres			560 Acres
1	3	03 +	Sunflower Vegetation Management	Chuck Schoendienst	Annual acreage figure				300 Acres	500 acres	5,000 acres		300 acres			
1	3	03-04	Sunflower Mechanical Treatment	Bill Burrows	Funded by landowners				2000 Acres (14 miles)	2000 Acres (10 miles)	2000 Acres (22 miles)		2000 Acres			4000 Acres
1	3	02 +	Sunflower Flat Water Development	Bill Burrows	Pond & engine access completed in 02											
1	3		North Red Bank Shaded Fuel Break	Bill Burrows												

Tehama-Glenn Unit
Fire Management Plan
2003

Zone	Battalion	Plan Year	Fire Management Project Name	Contact Person	Comment/Status	Urban Interface Area*			Wildland (Open) Area			Ownership				
						Area or Distance			Area or Distance			USFS	BLM	Other	Private Industrial	Private Non-Industrial
						Complete	In Progress	Planned	Complete	In Progress	Planned					
1	3		Sunflower Broadcast Burns	Andrea Carter	BLM Funding						2000 Acres		2000 Acres			
1	3		Crane Mills Shaded Fuel Break	Mark Pritchard					60 Acres		6 Miles (200 Acres)					
1	3		Proposed Extension Crane Mills Shaded Fuel Break	Mark Pritchard							2 Miles (76 Acres)					
1	3	03-04	Valentine Ridge/Colyear Springs Fuel Break	Bill Burrows/Dale Shippelhouse	RAC & USFS grants submitted in '03. Helitouch, ball & chain thin/burn	205					3 miles/500 acres	100 Acres	50 Acres		125 Acres	225 Acres
2	3	02	Cottonwood Creek Fire Management Plan	Vieva Swearingen	Completed with new projects added						603,854 Acres					
2	3	03	Tedoc Mountain CRMP-Phase 1	Vieva Swearingen	RAC grant submitted in '03 Will resubmit in 2004						3,000 Acres					
2	3	03	Quail Ridge Fuel Break	Vieva Swearingen	USFS grant submitted in '03 Will resubmit in 2004.			1 mile								
2	3	03	Quail Ridge Water Storage	Vieva Swearingen	USFS grant submitted in '03 for three tanks		X									
2	3	03	Platina Fuel Break	Vieva Swearingen	BLM Funded		X	73 acres								
2	3	04	Hammer Loop Fuel Break	Vieva Swearingen	Tehama County RAC Need Acreage			80 acres								

Tehama-Glenn Unit
Fire Management Plan
2003

Zone	Battalion	Plan Year	Fire Management Project Name	Contact Person	Comment/Status	Urban Interface Area *			Wildland (Open) Area			Ownership				
						Area or Distance			Area or Distance			USFS	BLM	Other	Private Industrial	Private Non-Industrial
						Complete	In Progress	Planned	Complete	In Progress	Planned					
2	3	95 +	Lake California Fuels Reduction	Greg Gutierrez	Annual acreage figure	600 acres	75 Acres									
2	3	03	Lake California Multi-Hazard Evacuation Plan	Greg Gutierrez												
1,6,9	34	03-04	Tehama West Fire Plan	Tom McCubbins	Grant submitted in '03 Work began winter of 2004.						700,000 acres					
9	4	01 & 04	Rancho Tehama Water Tanks	Dale Kinyon	Two completed in '01 & two planned in '04.											
FRA - east		03	Humboldt Summit Prescribed Burn	Ken Larson	Burning in both Tehama and Butte County Includes 200 acres of DFPZ						430	430				
FRA - east		03	Mt. Lassen Church Camp Fuels Reduction	Ken Larson	Hand Thinning, Piling, and Pile Burning			10								10
FRA - west		06	Alder Springs Fuel Break	Dale Shippelhoue	Thinning, underburning, mastication			1500								
FRA - west		07	Felkner Underburn	Dale Shippelhoue	Underburn in timber /plantations						500					
FRA - west		06	Spanish Fire Restoration	Dale Shippelhoue	Salvage/thin/pile/ burn						1000					

Tehama-Glenn Unit
Fire Management Plan
2003

Zone	Battalion	Plan Year	Fire Management Project Name	Contact Person	Comment/Status	Urban Interface Area*			Wildland (Open) Area			Ownership				
						Area or Distance			Area or Distance			USFS	BLM	Other	Private Industrial	Private Non-Industrial
						Complete	In Progress	Planned	Complete	In Progress	Planned					
FRA - west		03	Alder Springs Mechanical Fuel Treatments	Dale Shippelhoute	Mechanical treatments may include excavation and chipping											
FRA - west		03-08	Felkner Understory Burn	Jesse Rosenquist	Broadcast and pile burning			500								
FRA - west		02	Salt Log Chaparral Burning	Dale Shippelhoute	Burning on various ridgetops throughout the Grindstone Ranger District				2500							
FRA - west		03	Forest Highway 7 Underburn	Dale Shippelhoute	Hazardous Fuels Reduction underburns near Alder Springs	275										
FRA - west		02	Long Point Underburn	Dale Shippelhoute	Hazardous Fuels & timber underburns				150							
FRA - west			Sky-Hi Community Protection Project	Dale Shippelhoute	On Hold											
FRA west		01 +	Grindstone Chaparral Project	Dale Shippelhoute	Heli-tourch/landscape burns/ type conversions and fuel break maintenance	2291 (04) 2500 (03) 3500 (02)			2500 (03) 3500 (02)		Ongoing 2000 acres/years					

Tehama-Glenn Unit
Fire Management Plan
2003

Zone	Battalion	Plan Year	Fire Management Project Name	Contact Person	Comment/Status	Urban Interface Area*			Wildland (Open) Area			Ownership				
						Area or Distance			Area or Distance			USFS	BLM	Other	Private Industrial	Private Non-Industrial
						Complete	In Progress	Planned	Complete	In Progress	Planned					
FRA - west		01 +	Type Conversion Maintenance	Dale Shippelhoute	Type Conversion Maintenance Hazardous fuels reduction, wildlife enhancement				200 (04) 400 (01)		200 acres/year					
FRA - west		04 +	Oak Ridge Project	Dale Shippelhoute	Wildlife driven project will entail heli-touch burning in chaparral/ /underburning, and thinning in timber stands/ and underburning in glades				100 (04)		4000					
FRA - west		02	Telephone Pole Timber Sale	Dale Shippelhoute	Combination of thinning, piling, and burning				186							
FRA - west		03	KOP Timber Sale	Dale Shippelhoute	Thinning/piling/burning				268							
FRA - west		07	Cold Chimney Timber Sale	Dale Shippelhoute	Underburning for Hazardous Fuels Reduction						68	68				
FRA - west		04	Flat Timber Sale	Dale Shippelhoute	Thinning/piling/burning				195							
FRA - west		02	Gibson Timber	Dale Shippelhoute	Thinning, piling, burning				288							
FRA - west		04	Town Timber Sale	Dale Shippelhoute	Thinning, Piling, Burning				10		187					

Tehama-Glenn Unit
Fire Management Plan
2003

Zone	Battalion	Plan Year	Fire Management Project Name	Contact Person	Comment/Status	Urban Interface Area*			Wildland (Open) Area			Ownership				
						Area or Distance			Area or Distance			USFS	BLM	Other	Private Industrial	Private Non-Industrial
						Complete	In Progress	Planned	Complete	In Progress	Planned					
FRA - west		05	Fuel Break Maintenance	Dale Shippelhoute	Dozer Piling and mulching of fuel break vegetation						300	300				
FRA - west		04	Salt Log Timber sale	Dale Shippelhoute	Thinning, piling, burning						130					
FRA - west		03-Continuous	Misc. Chaparral Burning	Dale Shippelhoute	Burning, typed conversions and fuel break maintenance			10	2500-3000 187	2500-3000	2500-3000	2500-3000				
FRA - west		?	Dixon Orchard Shaded Fuel Break	Pioneer Resources	Roadside Fuel break Property now under USFS Ownership											
FRA - west		?	Shaded Fuel Break	Pioneer Resources	Ridgetop Fuels Reduction in the vicinity of grouse springs Property now under USFS ownership											
LRA	2	04	Rio Vista Tract 8.2	Perry Grissom	Prescribed Fire						23 Acres					
TOTAL MILES:						7 Miles	3 Miles	100 Miles	18 Miles	30 Miles	36 Miles					
TOTAL ACREAGE:						9371 acres	75 Acres	4981 Acres	36439 Acres	8706 Acres	1421564 Acres	12897 Acres	3665 Acres	1030 Acres	239 Acres	40093 Acres

*Includes USFS forest specific communities of concern not included on the federal list of communities-at-risk.

C. Cultural Issues

Support Bureaus: Other programs that need funding within the Tehama-Glenn Unit

VEGETATION MANAGEMENT PROGRAM IN FIRE MANAGEMENT



Attainment of the fuels reduction goals of the Tehama-Glenn Unit Fire Plan will require an on-the-ground effort and the Department's partial use of CDF, CDC, CCC crews, and equipment in many areas where stakeholders do not have the finances or resources to do an effective job individually or as a group. The Vegetation Management program (VMP) is currently the primary vehicle by which CDF resources may be used on privately owned lands. In place since 1981, the program has been an effective fuels reduction and rangeland improvement tool. Because of increasing competition for smoke allotments, CDF's use of fire to reduce fuel load may eventually be in jeopardy. If the use of fire is phased out, chipping and biomass supply will likely be the primary disposal method in the future.

Most fuel reduction projects are complex because they involve conflicting land-use interests and political factors. Any project likely to have a long-term impact on fuels and fire hazard will have to deal with the following:

- accommodation of property owner land-use
- active landowner participation
- planning for regrowth and long term maintenance
- overlapping jurisdictions
- long-term funding needs
- environmental clearance NEPA/CEQA.

If we ignore any of these issues, the project is unlikely to have a long-term impact.

TGU can use the VMP program as a leveraging tool. We have a lot to offer along with some limitation. VMP treatments usually provide only a portion of the long-term solution but CDF's efforts are usually critical inputs. We cover the fire-liability issue and have fire crews, dozers, engines and fire-expertise that is lacking in the private sector. We also have useful liaisons with other agencies and some experience in the environmental hoops.

However we have definite limitations in the area of our long-term commitments, especially in the area of funding. Our links to land-use practices are weak (NRCS, University Co-op and Farm Advisor are better). Our ability to influence County land use-decisions are unfortunately centered around water supply issues. CDF is generally excluded from subdivision placement and post-approval land use CCR's. In the conifer lands, we have

more potential influence through the Forest Practice rules, but this ability is limited to well-justified mitigations applied to the THP polygons submitted by timberland owners. In the NEPA arena, other agencies hold more cards and they can raise fatal issues unless they are enthusiastic participants in the project. Repeating myself, VMP can be a leveraging tool that we offer up when other benefits to public safety are being accomplished. If we do not see a similar commitment from the landowners and agencies, our long-term efforts will fail.

VMP is a cost-share program. The State's share of a project's cost may range from fifty to ninety percent. This is based on a public benefits formula where the greater benefit to the public, the greater the share of the cost of the project CDF may assume. By their nature, fuels reduction projects in critical areas identified in this plan will have a high public to private benefits ratio. Unit efforts will be concentrated in these areas. Conversely, projects that are essentially range improvement burns that are not near population concentrations will require a higher degree of landowner effort and proportional costs. This is not to say that rangeland burning is of minor importance. Through this century, range improvement burns have been vital in managing wildland fuels on a landscape basis. However, increasing population in the rural areas has brought constraints such as smoke management and liability concerns. Such constraints have made the LE-7, range improvement project, less attractive and has put VMP projects in higher demand with ranchers in the Unit.

The Unit currently has a variety of VMP and non-VMP projects in various stages of preparation, ranging from those with range and wildlife habitat improvement as the primary goals (Lassen Foothills and Vina Plains) to the Mill Creek LLC Shaded Fuel Break project, which has a community fire protection goal. The Tehama-Glenn Unit will make a concerted effort to pursue projects that meet the wide array of demands placed on the Vegetation Management Program in Tehama County.

Objectives

The vegetation management program will shift emphasis to:

- Smaller fuel reduction projects closer to new developments.
- Find alternatives to fire, such as mechanical fuel treatment.
- Emphasis on quality over quantity
- In some instances, the program may be limited to simply providing wildland safety and protection zones around high value assets. TGU can loan our ball & chain for private crushing projects.

VMP projects planned or being considered for FY 03/04 includes:

- Lassen Foothills Range Management
- Sunflower Vegetation Management
- Tedoc Mountain CRMP Phase I
- Lake California Fuels Reduction

Appendix 1 - Stakeholders

Watershed and Conservancy Groups

Battle Creek Watershed Conservancy*
Cottonwood Creek Watershed Group*
Deer Creek Watershed Conservancy*
Mill Creek Conservancy*
Reeds Creek – Red Bank Conservancy*
Sunflower CRMP*
The Nature Conservancy*

Fire Safe Councils

Cottonwood Creek Watershed Fire Safe Council*
Tehama Fire Council*

Industrial and Ranching Groups

Sierra Pacific Industries*
The Sheepmen's Association
Tehama County Cattlemen's Association

Governmental Agencies

Bureau of Indian Affairs
California Department of Fish and Game*
California Department of Transportation*
Department of Interior – Bureau of Land Management*
Glenn County Board of Supervisors*
Glenn County Planning Commission
Lassen National Forest*
Lassen National Park
Mendocino National Forest*
Resource Conservation and Development District
Shasta-Trinity National Forest
Tehama County Board of Supervisors*
Tehama County Planning Commission
Tehama County Resource Conservation District

Homeowners Associations

The Grindstone Rancheria
Lake California Homeowner's Association
Quail Ridge Homeowner's Association
Rancho Tehama Homeowner's Association
R-Ranch Property Owner's Association (* indicates information listed in Section 1)